

The Canadian Medical Association Journal

VOL. VI.

JULY, 1916

No. 7

DRUGS AND MEDICINAL AGENTS CONSIDERED FROM THE PROFESSIONAL, ECONOMIC AND NATIONAL STANDPOINTS

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TO talk on drugs and remedial agents is an old theme carrying us back in the vistas of our imagination to the days of Dioscorides and Galen, and very justly awakening the query, what are the special conditions in the practice of our profession to-day which have induced your esteemed President to consider a paper with the title which has just been announced as opportune, and perhaps interesting, at the present moment?

After some consideration I have deemed that the first and perhaps most outstanding fact in regard to drugs as a whole is the position which they at present hold in modern therapeutics. Years ago they were deemed to be of the first importance; without them there was no therapy. To-day, with the exception of the few which have a definite specific action on some of the discovered causes of disease, drugs in general have been relegated to a distinctly secondary place. For the cure of disease the physician to-day places more confidence in fresh air; on rest, either systemic or local; on a carefully arranged dietary which will afford a sufficient number of calories with the proper proportion of proteids, carbohydrates and fats to supply most perfectly the wants of the organism without unduly taxing any weakened or suffering organ; and on a rational application of the principles of hydrotherapy.

Certainly with the exception of the few diseases for which we have specific treatment, I know of none in which, if I had to make a choice between the use of these remedial measures and the use of drugs, I would not invariably choose the use of the former.

Address delivered before the Ontario Medical Association.

Received for publication June 5th, 1916.

This preëminence of these remedial agents in our modern ideas of therapy, the profession owes in great measure to the almost world-wide study of the conditions which influence the course of an infection by the tubercle bacilli in man and animals. No one advance in modern therapy has conferred so much benefit upon the sick and ailing as the recognition by the profession of the health-restoring properties of free, fresh, flowing air. I was much interested the other day when listening to an address by Dr. Frank Billings, of Chicago, on vaccine therapy, to hear him state that comparing the records of many hundreds of patients treated by the most carefully prepared autogenous vaccines, with the records of patients who received no vaccines but were placed under the most favourable hygienic conditions, with rest, abundance of fresh air and a carefully regulated dietary, he found that these latter with no specific vaccines had their defences aroused quite as quickly and as fully as those who received vaccines. On the other hand, in a few who received the vaccine treatment, but in whom no attention was paid to conditions of general hygiene and careful upbuilding of the strength, it was noted that the vaccines of themselves did not bring forth much of a response.

The importance of a dietary arranged to suit the digestive capabilities of the sick was recognized by Hippocrates, but it is only in recent years that physicians have appreciated the value of an estimation of the actual number of calories daily consumed by the patient in his food as compared with his actual requirements, and have recognized the benefits to be derived from such a modification of the amount of proteid, carbohydrate and fat as to supply efficiently these requirements without overtaxing any damaged or unduly fatigued organ. Still more recently they have been shown how much can be effected by a high caloric feeding on the one hand and by a brief starvation period on the other. Unquestionably this triad of fresh air, rest, and careful dietary should occupy the first place in our system of therapeutics at the present.

In the limited time at my disposal it is impossible to make more than a brief reference to vaccine and serum therapy, which now threatens to lessen yet further the need for drugs and thus to relegate them to a position of still minor importance in therapeutics. Two decades ago the profession hailed the introduction of this new method of treatment with the greatest optimism. It was hoped that by its means we should be able so to strengthen and hasten the development of the body's natural defences that we could promptly antagonize the causes of disease and combat infection with its own weapons. These natural defences, however, have proved much

more complex and multiple than at first even the scientists reckoned upon, and progress has been difficult and slow. Unfortunately, while scientific medicine has been earnestly and perseveringly working at these most intricate problems, many commercial houses by the introduction of practices not in harmony either with the conditions demanded by the primary hypotheses or with the teachings of bacteriology, and also by the publication of extravagant statements founded on no scientific evidence, have misled many in the profession into the use of mixed vaccines and semi-secret unstandardizable mixtures of bacterial products.

While it may perhaps be said that clinical investigation indicates that some temporary benefit may follow the injection of many protein substances in chronic infections, the general results obtained under observation have been most unsatisfactory. "Fundamental principles demand that therapeutic vaccines be composed of bacteria as little different and as little removed as possible from the special strains of bacteria causing the infection against which the vaccine is to be used." (Hektoen.) Therefore autogenous vaccines alone are to be relied upon, and it would appear a simple matter in almost every case for such to be prepared at the same time that the bacteriological diagnosis is made. We may add that the physician who accepts the mixed vaccines of commerce without knowing the exact etiological factor of the infection treated, certainly abandons rational medicine and gropes in the dark.

Concerning the use of drugs in our therapy a second statement that can be made, and which appears to me of great importance, is that the profession as a whole, while using drugs freely, often too freely, gives too little study to our gradually increasing knowledge of the exact physiological action of drugs and too little study to the dosage in which they should be employed. Drugs are to-day often prescribed with an erroneous idea of their power to influence special conditions or symptoms, and are often used in unsuitable doses. As simple illustrations the following may be cited: It is now generally agreed that a digitalis action when demanded by the heart's condition is best obtained by the use of the drug in full doses till its effects become manifest. In many prescriptions that I have seen the amount given is too small to secure the greatest benefit. To obtain results from the use of strychnine as a respiratory stimulant larger doses than the 1/50th or 1/60th grain in which it is often prescribed, are necessary. The strength of tincture of nux vomica in the last edition of the *Pharmacopæia* was reduced 50 per cent. to make it correspond with the strength of this tincture in other countries.

I have asked several druggists whether physicians had made any difference in the amount of this tincture ordered in their prescriptions before and after the change went into effect and have been told that very few had done so. Physicians cannot expect that ten minims of the new tincture will have the same result as ten minims of the old. On the other hand the preparations of iron are generally prescribed in unnecessarily large doses and purgatives are ordered with a too lavish hand. As a consequence of this indifference, or ignorance, the physician fails to get results, and his confidence in the official drugs, and perhaps his confidence in himself as a prescriber, is impaired.

Associated with this imperfect knowledge of the exact action of drugs, and the indifference to the proper or necessary dosage in which they should be prescribed, an increasing tendency has been evinced by teachers in hospitals, by writers in many text-books, and often by consultants, to undervalue the use of our official drugs in the treatment and relief of symptoms. Very properly etiology, diagnosis and prognosis in disease are all important, but ailing patients demand some mitigation of their troubles and by means of our official drugs, properly employed in proper doses, we are able to give all possible relief. Psycho-therapy, the influence of one mind on another, moreover, is a welcome addition, and may undoubtedly be of much service; perhaps be all that is required, but its use demands tact and judgement.

Another fact which for many years has appeared to me as unfortunate, is that the list of drugs in our *Pharmacopœia* is such a long one. Even the last edition contains for each of us a large number which long ago we consigned to the dust-heap; such as most of our antispasmodics and of our astringents, many of our drastic purgatives, many of the so-called bitter tonics and stomachics; also the phosphates and hypophosphites so often vaunted to the general public as nerve food, and many other drugs of a problematical value which have been allowed to slide through our brain cells into the region of forgetfulness; and very properly so.

Shortly after I received the appointment of professor of therapeutics in McGill University, Sir William Osler—then to us simply "Osler"—on a visit to Montreal, came and congratulated me on my appointment. "Don't teach the students many drugs, eight or ten are all that is necessary, but teach them these thoroughly," he said. I did not agree with his limited number then, but year by year I am becoming more and more of his opinion. My list of valuable drugs lessens, and although I am not yet limited to ten, I yearly decrease the number of those taught to my students

and emphasize to them the greater importance of knowing a few drugs thoroughly, rather than of knowing many drugs imperfectly.

Partly as a result of this relegation of drugs to a secondary place in the treatment of disease; partly as the result of a lessened confidence in the beneficial action to be obtained from the employment of our old official drugs; and partly also from a desire to exploit new drugs and new preparations, the physician to-day, I fear, is gradually using the drugs and preparations of the *Pharmacopœia* less and less, and in their place is prescribing the ready-to-hand formulæ of the manufacturing chemists, and not infrequently their proprietary preparations under patented names.

Large manufacturing houses of limited liability and immense capital, employing a skilled and highly educated staff, have been certainly in many ways of much service to our profession. Their triturate tablets, hypodermic tablets, and compressed tablets; their sugar-coated and chocolate-coated pills; their delicately-flavoured and brightly-coloured elixirs, and their sterile ampoules, have been of great assistance in our prescribing, and will be so long as the manufacturers are obliged to maintain a high standard of strength and purity. This, however, will require government supervision. Undoubtedly such preparations as I have mentioned tend to favour economy for the patient, and add greatly to the convenience of such physicians as are obliged to dispense their own prescriptions. Much caution, however, must be exercised, and an absolute veto be placed on the use of proprietary combinations with patented names, or on any preparations of which the formula is hidden or obscure.

The profession should speak on this matter in no uncertain tone, for to-day many of these manufacturing houses and many brazen-faced pharmacists have gone much further than to offer us our official drugs put up in form convenient for administration, or blended in special formulæ of their own devising, stated to be suitable for all constitutions and conditions. Many of them now attempt to give advice to physicians as to the latest treatment of disease and foist prescriptions upon us containing some so-called new chemical agent—otherwise a well-known drug under a new proprietary name. Still worse, in our own medical journals, which we are supposed to control, proprietary nostrums are ethically(!) so they state, offered only to the profession with highly exaggerated and totally unproven statements, claiming for their special combination all kinds of miraculous powers. Their agents, fresh from schools of plausible advertising, flood our shelves with their free samples and our desks with their blotters emblazoned with the sug-

gestive names of their special nostrums. Their literature arrives with every mail and is full of unwarranted statements loudly vaunting the virtues of their specifics; on every page flaunting ready-made prescriptions for the physician to copy, in which a valuable official drug is shown in combination with their wonderful elixir vitæ, thus salving the conscience of the physician, while the nostrum manufacturer exacts his heavy toll in the price paid.

May I ask this gathering whether they think a physician treats honestly a patient who consults him, when he prescribes a bottle of So-and-So's Compound Terpin Cough Mixture, or another So-and-So's Digestive Elixir, or a third quack's Wonderful Life Restoring Iron Tonic, when he knows little of what drugs are contained in them and nothing of the amount of the often powerful drugs he is actually giving when he prescribes such nostrums, and trusts implicitly in the statements of "Truthful James" the nostrum dealer? Can you afford me a better illustration of the blind physician leading the blind patient? You know the result.

All this nostrum and proprietary business depends upon secrecy, upon the zeal and assurance of the advertising proprietors, and upon the gullibility of the purchaser. Patent medicines, unless they contain some dope, are short-lived.

A very instructive story is that of Dr. Warburg, of Vienna. About the middle of last century Warburg's solution of quinine was very highly esteemed in many countries. The Austrian Imperial Health Board ordered it to be kept in all the pharmacies of the empire; English physicians in India averred that by it they effected cures they were unable to effect by the simple drug. But unfortunately for him sufficient pressure was brought to bear to induce him to divulge his recipe, and at once its sale fell off and shortly almost altogether ceased. Everybody said: Oh, is that all—quinine with a little aloes and aromatics. He died a comparatively poor man, and yet his combination had perhaps a certain amount of value. Compare him with Mr. Eno, of Eno's Fruit Salts, who died worth six million of dollars, or the self-dubbed Professor Holloway, vaunting the efficacy of his pills, and his ointment of turpentine and beeswax. He left money sufficient to found colleges for women and asylums for lunatics. Remember also Dr. Morrison and his pills of gamboge, colocynth, squills, cream of tartar and ginger—a pill such as my conscience and my knowledge of the action of drugs never would allow me to prescribe—and yet physicians, we are told, ordered them surreptitiously, and the English public swallowed them freely believing his wild statement, "that all diseases arise from one cause and therefore require but

one medicine; it follows that if Morrison's pills do not cure no other medicine on earth will, and infallibility belongs to God." In his days pills and statements were not sugar-coated but were made strong. Our modern proprietary humbugs cover their chaff with a little wheat and take care that their nostrums please the eye, tickle the palate, and gently stimulate the imagination by some suggestive name or statement.

It is also in my opinion reprehensible, and I do not think this is too strong a word to use, for the physician to countenance proprietary preparations of even official drugs. For the pharmacist the fact that he is obliged to keep such an innumerable array of proprietary preparations on his shelves, together with the special tablets and pills of not one but many large manufacturing houses, must demand a large cash outlay; an outlay for which the pharmacist must recoup himself out of the pockets of our patients. Such recouping eventually reacts against the profession.

Personally I do not think it makes any difference to my patients whether the tablets I order be made by Messrs. Brown or Messrs. Smith, provided that both manufacturers are careful and honourable, and supply pure drugs. The pharmacist should be held responsible for the large houses whose goods he dispenses. Very seldom indeed should the physician append the name of any manufacturing house to his prescriptions.

Another important fact which has to be recognized to-day is the number of new synthetic drugs which have been introduced to the profession by German manufacturing houses. A few of these have proved of very definite value, replacing many of our older drugs; the great majority of them, however, have proved failures. For the most part they are the by-products in the manufacture of other chemicals, especially of the aniline dye industry, and their introduction to the profession has been due to the very energetic business methods of our German *friends*! A few, especially the earlier ones, have come to us with their value attested by really careful research work in the experimental laboratory and by the observations of careful clinicians in the large German hospitals. Of late years, however, much of this work has evidently been of the most superficial character and the numerous large chemical industries of Germany have competed with one another for priority rights in flooding the markets of the world with new drugs of almost no value. All of these have had some sounding proprietary name indicative of their supposed action, to which was attached a scientific name to indicate profound chemical research.

A few of these new drugs were definitely appropriated from

the laboratories of both French and English chemists, the name given by the discoverer was changed and a newly coined one was patented and the medical profession paid the piper. You will remember that in 1894 hexamethylene-tetramine was synthetically made and its therapeutic value as an antiseptic announced by M. Albert Robin at the Academy of Medicine in Paris, under the name of formine. About ten years later under the German name of urotropine, with German patents, the same drug was introduced to the profession and was received without questioning by English, French, and American physicians, and the price demanded was paid; five times the price for which it could be made in an ordinary chemical laboratory.

This is but one example out of many. How was it accomplished? The German houses bought up, or ruined by underselling, all the chemical industries in France and Great Britain that either opposed them or stood in the way of their schemes. For the few years immediately preceding the war this synthetic drug business represented in Germany a modern trust in its most vicious manifestations. There were large chemical factories thriving on the past bounties given by a fostering government, large hospitals in which so-called clinical experiments could be made, high professors with sounding titles who did not hesitate to stoop to give certificates, and well paid medical journals which willingly published reports, long and many, calling attention to every new product.

The whole world still honours the perseverance and careful laboratory methods of Ehrlich in his search for a *therapia magna sterilisans* for syphilis. His 606 accomplished almost all, but yet not all that he claimed for it. It is far otherwise with many of the recent synthetic products which until the outbreak of the war were so sedulously brought to the notice of our profession in Canada and elsewhere. A short trial has shown that most of them are of little value and their introduction can only be regarded as a prostitution of laboratories, hospitals, and professors to commercial ends. Everywhere when science ceases to pursue truth for its own sake and becomes the poorly paid slave of commerce deterioration is, I fear, inevitable.

As I have mentioned, a number of these new synthetic drugs proved themselves of very definite value and replaced almost entirely many of our older drugs and their galenical preparations. Now, when our supply is cut short, we find ourselves in difficulty and appreciate how completely Germany in the chemical trade had made herself master of the situation. At present it is against the law to order or make use of any German wares, and under this law

falls the use of German made drugs and German patent names. On the other hand it has been questioned whether a pharmacist is at liberty to replace a substance ordered under its fancy German name by the same substance sold under its true scientific name. It is perhaps debatable, but the remedy is in our own hands. To-day quite a number of these really useful synthetic drugs are manufactured in England, France and Switzerland, and a few in Canada and the States, and have been placed on the market under their chemical names. It behoves us in writing our prescriptions to avoid the use of all patented names and to use only the name given in the *British Pharmacopæia*, or the chemical name. For this reason in prescribing we should write,

Acetanilid, not antifebrin;
Phenazone, not antipyryn;
Acetyl-salicylic acid, not aspirin;
Theobromine sodio-salicylate, not diuretin;
Methyl sulphonal, not trional;
Diacetyl-morphine, not heroin;
Barbitonum, not veronal;—and so forth.

The list is a long one.

Much more objectional even than the patented names of new synthetic drugs are the proprietary names representing the semi-secret and patented preparations of many large manufacturing drug houses, American, Canadian, and English. To these I have already referred, but desire to make one more protest against the prescribing of such nostrums by any well educated and right thinking physician. All use of such in prescriptions I regard as unethical, tending not to the honour but to the dishonour of our profession, and not to the advancement of true knowledge, but to the benumbing of research and as a retrogression towards the therapeutics of the dark ages.

When the war is over there is little doubt but that Germany will again make the attempt to dump large quantities of these drugs and chemicals in every civilized country with the hope of again ruining the chemical laboratories which to-day are trying to supply us with the synthetic drugs of which we stand in need. I must appeal to the patriotism of every physician to favour either the home made or the British made product. And to our government we would say that no industry is more important for our country than the development in all directions of its great resources by chemical research and no manufacturing houses are in greater need at the present of governmental protection than those which attempt to do for the development of Canada what large chemical laboratories and factories have done for the advancement and development of Germany.

THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER

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MOST surgeons and physicians are agreed that immediate operation is the proper treatment for acute perforations involving the stomach or duodenum, for selected cases of hæmatemesis of the persistent and recurring type, when associated with a clear history of gastric or duodenal ulceration, and for pyloric stenosis or hour glass contraction of the stomach.

Such emergencies and surgical conditions are the result of well-known destructive lesions affecting selected areas in the upper alimentary tract. The early recognition—the cause—treatment—and the clinical and pathological course, which such ulcers take are, you will agree, still the subject for marked difference of opinion. I think much of this lack of agreement is due to the standpoint of the physician and surgeon, and to the latter's personal experience in the operating room.

A patient with a typical history of gastric or duodenal ulcer, corroborated by *x*-ray plates and chemical tests, is treated successfully by appropriate medical, dietetic and other means. The patient may or may not have recurrence, but if he does, is again benefitted or cured by treatment. Nevertheless, increasing surgical experience shows that some of these patients have not suffered at any time from ulceration of the stomach or duodenum, but have suffered from appendicitis or cholecystitis, and sometimes nothing can be found to explain the symptoms. At other times the ulcer is there and not healed in spite of the free interval.

The typical history of duodenal ulcer so graphically described by Moynihan, with its hunger-pain, belching of gas, hyperacidity, etc., was first described by Hartmann in 1899 under the term "pyloric syndrome." These symptoms are associated with pyloric spasm and may be present in gastric ulcer, cholecystitis and ap-

Read before the Montreal Medico-Chirurgical Society, March 3rd, 1916.
Received for publication May 9th, 1916.

pendicitis, and in other less well understood conditions. Probably no organ in the body is so readily disturbed reflexly as the stomach. If this fact were kept constantly in mind, there would be fewer mistakes in diagnosis to record. Many patients are treated for gastric ulcer who are suffering from incipient pulmonary tuberculosis, or a chronic or recurrent appendicitis.

The frequent coëxistence of appendicitis and cholecystitis has been recongized for years and the belief is growing that it is more than a mere casual relationship. Cholecystitis is a well recognized complication or sequel of typhoid fever; why should it not accompany a definite, infected lesion in the appendix when the spread of infection follows the same channels? If we accept the infective origin of gastric and duodenal ulceration—and it seems to be the most plausible offered—the statement that a definite attack of appendicitis immediately preceded the onset of digestive disturbances which eventuated in chronic ulceration of the stomach, as demonstrated by operation, is quite trustworthy.

Can chronic gastric or duodenal ulceration be cured by dieting and medical treatment? The answer is undoubtedly yes, as shown by healed scars. That medical treatment is successful in a *majority* of the cases treated is, however, very doubtful.

Experience teaches us, that relief from subjective symptoms does not imply cicatrization and epitheliation of the ulcer. Indeed, we have no means of determining with accuracy the size, shape, or even the depth of the ulcer. Active ulceration without any subjective symptoms may reveal its presence for the first time, either by an alarming hæmorrhage or by an acute perforation. Given the condition of chronic gastric or duodenal ulceration, the patient is in a much similar condition to one suffering from acute appendicitis. In the latter, resolution with complete or imperfect restoration of the tissues may occur, or ulceration, perforation, or gangrene with local or wide spread infection may take place. If we "wait and see" as was done in the early history of this disease, we learn which course the inflammatory process will take. Since the risks of operative treatment are infinitely less than the "wait and see" policy, the medical profession and the laity have chosen the safer course in the treatment of this particular disease.

In our general and special hospitals, marked deformity of the spine, and destruction with deformity of joints, though all too common still, are much more rare than they were fifteen or twenty years ago. This is mainly due to the earlier recognition, and prompt

and efficient surgical treatment applied to tuberculous disease of bone, in its incipient stage, before the joints have become actually involved. Efficient treatment should largely prevent pyloric stenosis—hour glass contraction—perforation—hæmorrhage, and, if we accept Moynihan and Mayo's statistics, cancer, the result of chronic ulceration.

I submit that a patient who is suffering from what is diagnosed as a gastric or duodenal ulcer, and who is not cured in three or four months and who suffers from two or more relapses, even if he is benefitted by medical treatment, should be subjected to an exploratory operation, so that the actual conditions present may be observed and, if possible, dealt with surgically. This, however, does not imply that the excision of an ulcer with or without a gastrojejunostomy performed successfully—that is that the patient recovers from his surgical operation—should be the "be all and end all" of his treatment. On the contrary, these cases should remain under medical supervision and care, until the physician in charge considers the case perfectly well. The majority of gastric and duodenal ulcers show an associated gastritis involving the mucous and submucous coats of limited or wide extent, well seen at operation. I feel certain that were this method in actual practice, the post-operative records and histories would show a very marked improvement. All experienced surgeons acknowledge that much needless and meddlesome surgery has been practised on this organ. Even the very elect confess to the undoing of their own surgical procedures, when operative intervention has made bad, worse. This, however, refers to the early days of gastric surgery, when gastrojejunostomy was regarded as a "cure all" for stomach distress—irrespective of its etiology.

Before discussing the operative procedures applicable to ulcer of these organs, I should like to refer for a moment to what may be termed "operative diagnosis". In many cases the evidence of ulceration is readily recognized on exposing the viscera and this is confirmed by palpation. In others the massive induration, dense adhesions and frequent extension of the ulceration into contiguous organs make the diagnosis one of extreme difficulty. Cancer is suspected, if the latter, it is inoperable, if simple ulceration, the patient may and quite often recovers.

I wish to speak, however, more particularly of suspected cases of duodenal ulcer, in which we get an unusually firm pyloric ring deeply congested, with a few veil-like adhesions covering it, often adherent to the gall bladder, or to a tag of omentum, but

where we fail to get definite duodenal induration—wherever a doubt exists—I think the duodenum ought to be opened and the interior explored. I am certain that I have erred in the past in regarding such a condition, the result solely of a localized peritonitis of gall bladder origin, as an ulcer, and treated it as such, without benefit to the individual.

Finally, if no duodenal or gastric ulceration can be clearly demonstrated, a most careful examination of the abdomen should be made for evidence of disease elsewhere—in the appendix, gall bladder, pancreas, crippling adhesions or kinks, or the early evidence of intestinal or peritoneal tuberculosis.

If nothing tangible is found, there is nothing to do but close the abdomen and give the physician and operator an opportunity for further study and thought.

Perforation of a gastric or duodenal ulcer, with the exception of appendicitis, is the most frequent acute lesion of the abdomen. The intense agonizing epigastric pain and board-like, even retracted, abdomen in the early stage are almost pathognomonic of this lesion.

The mortality bears a direct relationship to early diagnosis and operative treatment. Preoperative treatment should be the exhibition of a full dose of morphia and the upright position. The perforation, exposed by a suitable incision, determined by the clinical history, should be closed by through and through cat-gut sutures, supplemented by a row of Lembert silk sutures, and if necessary, covered by an omental graft or by the gall bladder. Avoid, if possible, tube drainage, especially in duodenal perforations.

When the lumen of the pyloric antrum, pylorus or duodenum is seriously encroached upon by the infolding, add a gastrojejunostomy; otherwise this is unnecessary as a rule, and unduly prolongs the operation. Sponge out the upper abdomen carefully. Insert a rubber tube, through a stab wound above the pubis, into the pelvis, and close the abdominal wound completely. In late cases or where much gross stomach contents have escaped, more thorough cleansing must be employed.

GASTRIC HÆMORRHAGE

Severe, profuse, recurring hæmorrhages, without a definite history of chronic gastric ulcer, are usually due to gastric erosion or hæmorrhagic gastritis, and in my opinion should never be subjected to surgical treatment. If rest, morphia, horse serum or blood transfusions combined with very hot gastric lavage, and

adrenalin in suitable doses, fail to save, then surgery is of little avail.

Persistent, recurring hæmorrhages associated with a definite ulcer history should be dealt with surgically—during a free interval. Excision of the ulcer, with ligation of vessels and suturing of the wound, is ideal when practicable. Tying the bleeding point, as a rule, is impossible.

The application of the cherry red cautery point is not quite satisfactory. A circular purse string suture with subsequent infolding is quite efficacious, in some cases, when applicable.

Pyloric stenosis requires gastrojejunostomy and this, irrespective of the exact site of cicatricial contraction. I have used both iso- and anti-peristaltic anastomosis with equally good results.

Keeping in mind the experimental work done by Drs. Archibald and Scrimger, I have aimed at getting the stoma as close to the pylorus as the ulceration would allow. Besides I have tried to determine the usefulness and value of pyloric occlusion, by infolding—fascial bands, pylorotomy, etc. Since using the fascial band and forming the stoma close to the pylorus, I am certain that patients have had more vomiting and a greater tendency to post-operative bleeding, than was formerly the case.

For the treatment of gastric ulcer not situated at or near the pylorus there is no unanimity of opinion. Many think gastrojejunostomy sufficient, others recommend resection, especially for the saddle-shaped or single anterior and posterior ulcers situated within easy reach.

For high lying ulcers Balfour's method of complete destruction with the cautery, followed by suture, seems to offer excellent results and will probably be more generally employed in the future.

For massive ulcers occupying the prepyloric region, complete excision with closure of each end and gastrojejunostomy, Rodman's operation (i.e., pylorotomy) gives ideal results, often with less post-operative disturbance than follows a simple gastrojejunostomy. Hour-glass contraction should be excised if possible, if active ulceration is still present, and an end to end anastomosis effected. When no active ulceration exists, as in one of my cases, a Heinicke-Mikulicz operation with gastrojejunostomy gave good results.

Gastrogastrostomy and a double gastrojejunostomy have been used with success.

Recurrence of ulcer: Both perforation and severe hæmorrhage have followed gastrojejunostomy.

A new ulcer has developed after the successful surgical treat-

ment of a chronic one. Most of these have occurred at or about the site of anastomosis.

They have been reported most frequently following Roux' operation, in which the beneficial effects of duodenal secretion bathing the site of anastomosis are absent.

They have occurred with especial frequency experimentally and clinically when silk has been used for the hæmostatic suture. W. Mayo thinks the continuous silk Lembert suture favours this complication and recommends the interrupted suture instead. A return of gastric symptoms after a period of relief following operation should suggest the possibility of this complication—a serious one, since death may take place from perforation or hæmorrhage.

STATISTICS

The present series of cases dealt with during the last two years has been arbitrarily chosen for review, because during this period I have been employing the fascial band for exclusion, in selected cases. Twenty-two cases in all—twelve of which were regarded as distinctly duodenal and ten as gastric, and in the majority of cases close to the pylorus or involving the pyloric region.

Of the twelve duodenal cases, nine came to operation. In one case, previously operated on for perforation by Dr. Keenan, there was a recurrence of the indigestion, disability and weakness. The average of all ages was 46½ years. Seventy-five per cent. were males—25 per cent. females. All gave a history of indigestion lasting more than one year. In two cases digestive disturbance had existed off and on for twenty years. The shortest period was two years. One case had suffered for fifteen and another for eight years.

Pain was the prominent symptom in all, chiefly epigastric in eight, the upper abdomen in three, the right side in one. Definite hunger-pain was complained of by seven. In one food aggravated the pain. Only three had marked radiation of the pain. Hæmatemesis and melæna occurred in three and occult blood in one other, that is in about 25 per cent. of cases.

These statistics refer to the nine cases which came to operation.

Chemical and microscopical examination of a test meal was made in a certain number of these cases.

In the gastric ulcers, seven came to operation out of ten cases so diagnosed.

In one the ulcer on the lesser curve midway between the pylorus and œsophageal opening, was treated by resection.

In one a saddle shaped ulcer occupying a similar position was also resected.

In one on the posterior aspect of the antrum close to the pylorus, a very indurated and adherent ulcer was treated by gastrojejunostomy and a fascial band, proximal to the ulcer.

In one situated on the anterior wall, in the pyloric region—indurated and perforated, closure, without gastrojejunostomy.

In one on the posterior wall, rather nearer the lesser than the greater curve—excised.

In one, a bilocular stomach due to a healed encircling ulcer, and associated with an indurated ulcer on the posterior wall of the duodenum, which was still active and adherent to the head of the pancreas, was treated by the application of the Heintze-Mikulicz principle, a gastrojejunostomy and a temporary jejunostomy to facilitate early feeding.

One ulcer, on the lesser curvature, situated high up towards the œsophagus, gave me considerable difficulty in resecting it, and in subsequently closing the wound, owing to the narrow epigastric angle.

GASTRIC ULCERS

The average age of these cases was $33\frac{1}{2}$ years. $66\frac{2}{3}$ per cent. were males and $33\frac{1}{3}$ per cent. females. Four had a history of less than one year.

One with perforation gave a history of indigestion lasting but two weeks, treated by "dieting", which consisted in eating chiefly pie and raw apples. The patient declared he never had pain in his abdomen, nor any symptoms of indigestion prior to that period.

Six gave a history of more than one year, and one of twelve years or more.

All had pain in the epigastrium more or less severe. Seven gave a distinct and repeated relation to the taking of food, four of these within one and a half hours of eating, and three two hours or later.

In two there was repeated history of hæmatemesis—in three, melæna. In only one was occult blood found in the stools. X-ray examinations corroborated the clinical diagnosis in those cases in which they were employed.

The complications following surgical treatment in the duodenal cases have been unusually high.

In five cases there was vomiting coming on at varying intervals—consisting of dark brown, greenish, or bloody fluid.

In two obstruction was demonstrated by means of x-ray plates

and the barium meal, and I am indebted to Dr. Martin for the timely use of this means of diagnosis in the first case, which had many of the ear-marks of acute dilatation, and which I thought it was. Both of these will be referred to later. Both required a second operation, which shall also be discussed.

A fascial band was employed in six cases. Three made an uneventful recovery and three had marked and early vomiting.

There were two cases of pleurisy; one dry and the other with effusion.

There was one death from pneumonia.

The complications in the gastric ulcers were insignificant, with one exception. The ulcer was situated at or about the pylorus. Gastrojejunostomy was performed, and a proximal fascial band was applied. Acute dilatation of the stomach with persistent oozing of blood supervened, as was demonstrated in performing gastrostomy for its relief. The patient made a good recovery.

REPORT OF CASES

Several of these cases present points of interest either from the clinical or from the operative standpoint, and merit more extended notice.

Case 1. Mrs. B., aged forty-four, referred by Dr. Mulloy, complained of epigastric pain, marked constipation, and of frequent coffee ground vomiting. In the hospital there was no melæna and no evidence of occult blood in the stools. She was tender in the epigastrium and right hypochondrium. Fluoroscopic and x-ray plate examinations showed a bilocular stomach and the evidence of a duodenal ulcer.

At operation a transverse incision through the hour-glass constriction revealed complete healing of the encircling ulcer. This incision was extended widely into the proximal and distal pouches, and then sutured vertically as in a Heinnie-Mikulicz pyloroplasty. The deeply excavated duodenal ulcer adherent to the head of the pancreas, causing considerable stenosis, was left alone, but a gastrojejunostomy was established at the proximal pouch. To facilitate early feeding and to give the stomach a period of complete rest, a jejunostomy was done; the tube was removed on the twelfth day, when the patient was taking soft food and liquids by the mouth. She made a slow but steady recovery and left the hospital gaining steadily in health, strength and weight, with a good appetite and free from pain.

Case 2. R. E., thirty-one years old, referred by Dr. Elliott,

of Scotstown, complained of epigastric pain, tarry stools, weakness, belching of gas. There was a history of attacks of indigestion for eight years. These attacks were worse in the fall of the year and were attributed to eating apples. All attacks were relieved more or less quickly by dieting.

At operation an excavated indurated ulcer, adherent to the head of the pancreas, and about an inch from the pylorus, was found. Gastrojejunostomy and the application of a fascial band, proximal to the ulcer, were employed. That night and the following day the patient vomited on several occasions large quantities of thin, bright red fluid. Lavage with hot water and the use of adrenalin and horse serum gave no permanent relief to his symptoms. Lavage, while giving temporary relief to the gastric symptoms, induced such weakness and exhaustion that it was discontinued.

Forty-eight hours after operation, under local anæsthesia, a two inch left subcostal incision was made revealing an enormously distended stomach. Gastrostomy was performed using a Pezzer catheter of large calibre, giving exit to a larger quantity of foul smelling gas and dark red bloody fluid. The stomach was washed clean, through the tube, and adrenalin and horse serum employed from time to time. The tube was left open and drained away small quantities of foul smelling bloody fluid. Vomiting was immediately arrested. On the third day four ounces of blood were transfused from his sister and six hours later gastric drainage ceased to be bloody. The tube was removed on the fifth day.

For the first five days nutrient enemata and intravenous salines were employed, but from that time on food was given by mouth. The patient left the hospital on the fifth week in good condition and has made a very satisfactory recovery.

A few weeks later I operated on a younger brother, removing a deeply excavated ulcer, near the lesser curvature, but on the posterior wall of the stomach. He made an uneventful recovery.

Dr. Elliott later informed me that there was a distinct history of hæmophilia in the family, and that five immediate relatives had died from gastric or intestinal hæmorrhage.

Case 3. E. R., aged forty-eight. This patient gave a history of recurring attacks of pain in the epigastrium or lower thorax, aggravated by exertion or hard work. Vomiting and belching of gas relieved the pain. There was no history of hæmatemesis or melæna, but occult blood was found in the stools. These attacks had recurred so frequently and lasted so long during the last two years that he has been compelled to give up his trade. From fluoroscopic and roentgenographic examinations, Dr. Cheney reported the

probability of a duodenal ulcer, thus corroborating the diagnosis made from the clinical history.

At operation, the antrum, pylorus and first portion of the duodenum seemed to be perfectly normal. The pylorus admitted the end of my index finger. There was no adhesion or congestion of the peritoneal coat, and no induration. Dr. Armstrong saw the condition at operation. The abdomen was carefully explored but nothing abnormal was found. I decided to open the duodenum for inspection and found two sharply punched out ulcers (contact), one on the anterior and the other on the posterior wall. Each could easily hold half of a large green pea. The surrounding mucosa was soft, plush-like, and deeply congested, but not indurated in the slightest degree. Gastrojejunostomy was performed and a fascial band applied. The patient during convalescence developed a dry pleurisy, but left the hospital on the thirteenth day well, with a good appetite and free from all epigastric distress.

Case 4. W. M., aged fifty, was referred by Dr. Nelson with a history of chronic indigestion, pain, hæmatemesis and melæna.

Dr. Martin recommended surgical interference. At operation an indurated duodenal ulcer was treated by gastrojejunostomy. Convalescence was smooth until the ninth day when he began vomiting small quantities of thin brownish-green fluid. There was no pain. The epigastrium was full and he complained of intense thirst. The passage of the stomach tube gave exit to large quantities of thin fluid, corroborating the diagnosis of acute dilatation which had been made, and gastric lavage gave immediate, but only temporary relief.

Dr. Martin recommended a barium meal and x-ray plates. This showed that barium left the stomach by the stoma, but was arrested about six inches from the anastomosis. A second operation revealed an acute kink of the distal loop of the jejunum which was readily corrected. Jejunostomy was performed to facilitate feeding and give the stomach complete rest. The tube was removed on the ninth day and the patient subsequently made a very good recovery. He has steadily gained in weight, strength, and well being, and is free from indigestion at the present writing.

Case 5. L. L., aged forty-three, referred by Dr. Hamilton, gave a history of hæmatemesis, melæna and indigestion.

Gastrojejunostomy was performed for a duodenal ulcer situated on the posterior wall. No fascial band was employed. The patient vomited some blood for the first twenty-four hours following operation, and had in addition persistent high fever with

gradual increase of pulse rate. Pneumonia was suspected but its location could not be demonstrated by physical signs. At the end of forty-eight hours the condition was desperate, but he improved rapidly after an intravenous of saline and adrenalin chloride. The improvement continued for the fourth and fifth days in spite of the fever and rapid pulse, the patient taking nourishment in the form of albumen-water, and sterile broth in abundance. There was no vomiting, no pain, and practically no cough. Towards the evening of the fifth day the alarming symptoms of the second day returned and, in spite of the intravenous salines, the patient died on the morning of the sixth day.

Autopsy revealed an extensive patchy consolidation of the left lung. This is the only death in the series reported.

Case 6. W. S., referred by Dr. Conroy, gave a typical history of duodenal ulcer which was readily demonstrated at operation.

The duodenum was markedly dilated although the jejunum was contracted. The duodeno-jejunal junction seemed to lie farther to the right and lower than normal. Otherwise no other cause was found to explain this condition.

Gastrojejunostomy was performed. In addition to the dilated duodenum the stomach was ptosed and dilated. Recovery was ideal until the fifth day when the patient began vomiting. The stomach tube revealed a dilated stomach and gastric lavage with rectal feeding gave immediate relief. On returning to gastric feeding vomiting returned and a barium meal with x-ray plates showed that no material passed out of the stomach.

On the tenth day a second operation showed no adhesion but a twisting of the proximal and distal loops of jejunum to the right, with some contraction and thickening of the opening in the transverse meso-colon. The stomach occupied a much higher level than at the first operation. The narrowed ring was cut, the twist undone and maintained by two or three sutures and a jejunostomy performed. The tube was removed at the end of twelve days, since which careful dieting has not been followed by any vomiting.

Case 7. Dr. B., aged fifty-one, referred by Dr. Hamilton. This case illustrated another interesting complication in which duodenal ulceration in an active condition coëxisted with cholelithiasis. The previous history was that of painful epigastric attacks, flatulence, melæna, but no hæmatemesis.

At operation a chronic duodenal ulcer with marked induration, occupied the posterior wall just beyond the pylorus, but in addition there was an acutely inflamed gall bladder containing many

stones. Gastrojejunostomy was performed and then the gall bladder was opened and the stones removed, but a small stone encysted in the cystic duct could not be dislodged. The bladder was drained and finally the fistula allowed to close.

As was expected, in a few months there occurred a sharp attack of pain with fever, chills, etc., and a localized swelling due to acute purulent cholecystitis. At a second operation cholecystectomy was performed. The patient has made an excellent recovery, gaining in weight, health and strength, and with complete freedom from gastric disturbance.

The writer is indebted to Dr. Melhado for valuable assistance in collecting and preparing the statistics in the cases recorded.

At a meeting of the Calgary Hospitals Board on May 17th, a discussion took place as to whether the public wards of the General Hospital should be made free to residents of Calgary. This proposal was made by Mr. E. H. Riley, who contended that the financial loss incurred by such a change would not amount to more than \$10,000 a year, and that free wards would offer better accommodation and would conduce to the peace of mind of those patients who are unable to pay. The consensus of opinion, especially amongst members of the profession, was against such a departure on the grounds that, under the present arrangement, non-paying patients receive exactly the same treatment as those who pay and no one except the members of the office staff knows whether they pay or not, that 20 per cent. of the total revenue from patients would thus be lost and the amount would have to be added to the general taxes, a procedure not to be advocated at the present time. Consequently, it was moved by Mr. J. H. Woods and seconded by Mr. E. G. Pescod, "That in the opinion of this Board the present financial conditions existing render it inadvisable and practically impossible to impose any further burden on the taxpayers of the city of Calgary by making free the public wards of the Calgary General Hospital." This motion was carried, Mr. Riley casting the only dissenting vote.

THE OPERATIVE TREATMENT OF SIMPLE FRACTURES

BY E. R. SECORD, M.D., C.M., F.A.C.S.,

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IN 1894, Sir Arbuthnot Lane delivered an address before the Clinical Society of London, in the course of which he made the following statements:

1. That accurate, or anything approaching accurate, apposition of displaced fragments in a fracture, was only very rarely obtained.

2. That the treatment of fractures, as it existed, was a disgrace to surgical practice, because those who had sustained fractures, especially of the leg, only too often experienced enormous physical disability.

He advocated the treatment of simple fractures of the long bones by operative measures, for the following reasons:

1. They at once relieve the patient from the pain produced by any movement of the fragments upon one another.

2. They free him from the tension and discomfort, due to the extensive extravasation of blood, between and into the tissues.

3. They shorten the duration of the period during which he is incapacitated from work.

4. Lastly and most important, they leave his skeletal mechanics in the condition in which they were before he sustained the injury.

The operative treatment of simple fractures met with the most violent opposition for many years, until in 1912, the British Medical Association appointed a committee "to report on the ultimate results obtained, in the treatment of fractures, with or without operation."

The report of this committee may be briefly summarized as follows:

1. In children, non-operative methods show a high percentage

Read before the Brant County Medical Society, April 13th, 1916.

Received for publication April 24th, 1916.

of good results, except in fractures of both bones of the forearm. Operative methods show equally good results.

2. In comparison, the results, in those over fifteen years of age, by non-operative treatment, are not satisfactory.

3. There is a progressive depreciation of the functional result, by non-operative methods, as age advances—the older the patient, the worse the result.

4. In cases treated by early operation, the deleterious influence of age upon the functional result is less marked.

5. In nearly all age groups, operative cases show a higher percentage of good results than non-operative cases.

6. Although the functional result may be good with an indifferent anatomical result, the most certain way to obtain a good functional result, is to secure a good anatomical result.

7. No method, whether operative or non-operative, which does not definitely promise a good anatomical result, should be accepted as the method of choice.

8. The mortality directly due to the operative treatment of simple fractures of the long bones has been found to be so small, that it cannot be urged as a sufficient reason against operative treatment.

METHODS OF OPERATIVE TREATMENT

If then, we are prepared to accept the findings of this committee, we must conclude that the final results are better, in fractures of the long bones in adults, when treated by operative rather than by non-operative methods.

These methods have varied somewhat with the exact site of the fracture, but up till recently have consisted in an open incision over the fracture, the accurate replacement of the fragments in exact alignment, the temporary retention in this position by traction, manual or otherwise, assisted by specially devised forceps for grasping and holding the bone ends, and permanent fixation by the application of one or more steel plates, with two or more holes at each end, through which screws are driven into the bone, beyond the fracture line, thus holding the fragments firmly in place. In certain localities, staples, steel nails, screws, and occasionally silver wire may be more advantageously used.

Within the last two years considerable antagonism has developed towards the use of these foreign bodies, which are left in the tissues. Many articles have been written claiming that they do not attain their object, that they bend or break, that the screw

works loose through a process of rarefying osteitis, that a low grade infection is set up which subsequently demands the removal of the plate, and some writers have gone so far as to condemn entirely the use of "hardware" in any form.

Albee, of the Post-Graduate Hospital in New York, may probably be called the leader in this school of thought. He advocates the use of autogenous bone grafts to unite the fractured ends and keep them in alignment, and he practically never uses metal. His method consists in the insertion of an "inlay graft," either by "sliding" from the bone above the fracture, or by transference from some other bone, preferably the tibia.

After an experience of a considerable number of cases, in which both methods were tried, I am thoroughly convinced that the trend of surgical opinion and practice, for this particular type of case—that is the operative treatment of recent fractures—will be away from the graft and back to the plate. I have conversed with several surgeons, who have tried the "sliding graft" in a number of cases, and have yet to find one who is fully satisfied with it. Gallie, of Toronto, has given up this method entirely, and is experimenting with heterogenous bone plates, and bone screws, with the idea of being able to use absorbable material instead of metal. Some success has crowned his work, and his method may find a place in the treatment of certain fractures, especially in children. Armstrong, of Montreal, has used an ox femur, sawn transversely into rings of various sizes, one of which may be slipped over the fractured ends, thus forming an internal splint which holds the fragments in place.

This is not the place to enter into a discussion of the relative merits of the autogenous, and heterogenous bone graft. Suffice it to say that, in my opinion, the autogenous graft is far superior in the vast majority of cases where a graft is indicated, but in the treatment of *recent* fractures the graft is rarely indicated, and the steel plate remains the method of choice.

The chief objections to the "inlay graft" method are:

1. The great amount of manipulation necessary to obtain and place the graft, the greater area of bone exposed, and the increased disturbance of the neighbouring muscular attachments.

2. The difficulty of accurately retaining the graft in place or in other words the comparatively small amount of force which will dislodge it from its bed.

Albee's plans and diagrams are very ingenious, and look wonderfully well—on paper, but he depends for retention on kangaroo



Fig. 1—"Skinner's Lines "

"The entire Styloid Process of the Radius is distal to a line which is drawn through the tip of the Ulnar Styloid at right angles to the long axis of the Radius."



Fig. 2—Result of Fracture of Patella, in a male aged 73, five weeks after "Wiring."



Fig. 3—Fracture at junction of upper and middle thirds of Femur. Usual deformity.

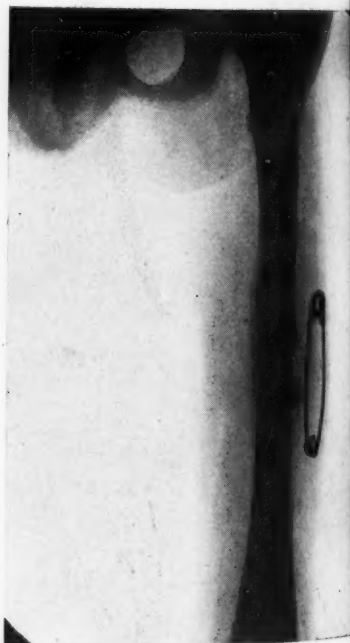


Fig. 4—Result in same case six weeks after operation.



Fig. 5—Fracture of Tibia and Fibula
from direct violence.

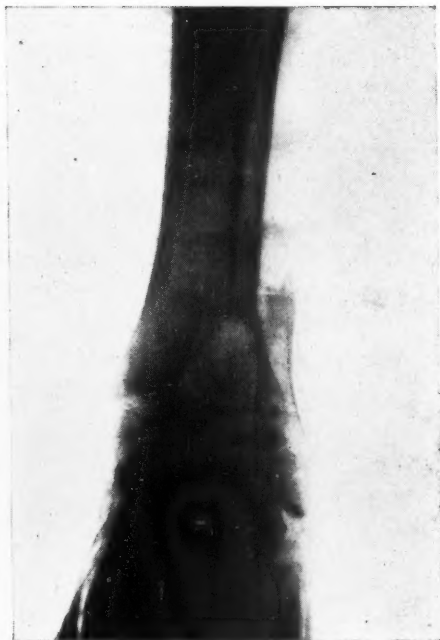


Fig. 6—Unsatisfactory result of
attempt at reduction of same by non-
operative means.
Note overlapping of Fibular frag-
ments. Radiographed through Plas-
ter of Paris Cast.



Fig. 7—Result after operation, with
plate on the Fibula.



Fig. 8—Same, Antero-Posterior View.
Note the perfect contour of the Tibia,
without the use of a Plate.



tendon, passed either through drill holes in the bone, or through the periosteum alone. We have found repeatedly that though the kangaroo tendon itself is strong enough and perfect in every respect, it frequently breaks when tied with any degree of tension, because it cuts on the sharp edge of the drill hole in the bone.

I am of the opinion that the great majority of the failures in the use of the steel plates arise from defective technique, and I would lay great stress on the danger of the words "internal fixation" as applied to the operative treatment of fractures. I believe that the same care should be exercised in the application of retentive apparatus after a fracture has been plated, as when this has not been done, and I feel that it is the omission of this precaution that has resulted in the reports of cases of loose, bent, or broken plates, and loosening screws. It is well known that bone will absorb under pressure, and if the screws, holding the plates in position, are subjected to strain, they will undoubtedly sooner or later work loose, by the very process of rarefying osteitis, which has been blamed on the screws themselves. Lane says that rarefying osteitis means in plain English "dirty surgery", and it probably does so in many cases, but undue tension on the screw thread will undoubtedly cause the screw to loosen. My belief, therefore, is that the best method of operative treatment of recent fractures is the steel plate, properly applied, followed by accurate closure of the wound, with the use of continuous iodine catgut for the skin, so that a plaster of paris bandage may be immediately applied, and left on until such a degree of bony union has been secured, that it may be safely removed. The use of the Hawley Traction Table, or of some other method for securing steady and continuous traction, is of very great assistance in maintaining the limb in proper position until the plaster splint is in place.

Whatever the final decision may be in these debated problems, of one thing I am sure, and that is that the degree of surgical asepsis which permits a successful abdominal operation, will not answer for successful bone work. The surgeons of the largest experience in every country are laying more and more stress on this point. Lane is particularly emphatic in maintaining that the surgeon's hand, always gloved, must never come in contact with the wound, or bone, nor must any instrument which has been in contact with the skin. Murphy, of Chicago, is equally insistent that there must be no hand contacting in bone operations. Special instruments are therefore of great assistance, and I have found the bone plate holder, and the screw holding screw driver invaluable.

The plates and screws are left in the instrument sterilizer, in a small basin, until needed. The basin full of boiling water, is then set on a convenient table, and each screw and plate picked out by forceps, as required. They are thus guarded against contamination until the last possible moment. The skin incision is protected by towels, sewn by interrupted catgut stitches to the subcutaneous tissues, so that no skin is exposed or visible after the first incision has been made. The towels are much more easily and accurately held in place by the catgut stitches, than by any mechanical clip. I have found Albee's electric drill of great value in saving time and labour in making the holes in the bone to receive the screws.

INDICATIONS FOR OPERATIVE TREATMENT

I do not believe that all simple fractures should be operated upon, but I do believe that all fractures of the long bones in which accurate apposition has not been attained, and proved by radiograms from two angles, will give better results by operation, unless for some special reason any surgical operation would be contra-indicated.

Colles' Fracture, in general, does not require operative treatment, but emphasis should be laid on the value of Skinner's lines in gauging, from the radiogram, the accuracy of the replacement which has been secured (Fig. 1).

Fracture of both bones of the forearm, at or about the middle third, will almost always give a better result, from operative, than from non-operative methods.

Fractures about the elbow joint in children constitute a large class almost by themselves. Each case must be judged on its own merits, after careful radiographic study, but as a general rule, to which there are many exceptions, better results will be secured by non-operative treatment in the hyper-flexed position than in any other way. I know of no other group in which as good functional results will finally follow what is evidently imperfect anatomical replacement, as in this class.

Fractures of the olecranon will usually do better with operation, and this is one of the few places where "wiring" is permissible.

Fractures of the humerus will in general do better with operation, but the technical difficulties in avoiding vessels and nerves are greater than in dealing with fractures of the lower extremity.

Fractures of the clavicle occasionally require operative treatment, but usually the functional results of non-operative treatment are good.

Fractures of the os calcis, in which there is complete separation of the posterior fragment, will give better results when nailed, than in any other way.

Pott's fracture requires operative treatment if there is much laceration of the tibio-fibular ligaments, permitting separation of these bones. In this type the nailing operation is most useful.

Fractures of both bones of the leg will nearly always give better results when operated upon. It will occasionally be found that the failure of non-operative attempts at reduction is due to a locking of the fragments, and that, when an incision has been made, the fragments unlocked, and placed in correct position, there is little tendency to displacement, and that no further intervention is necessary, or that a plate on one bone alone will amply suffice. (Figs. 5, 6, 7, 8.) If the tibia alone is broken, good results may be secured by non-operative means, but it should always be demonstrated by radiogram that good anatomical reposition has been obtained, and the radiograms should be both antero-posterior and lateral.

Fractures of the patella should always be operated upon, and I much prefer wiring of the bone, and suture of the torn capsule and lateral aponeurosis, to suture alone. (Fig. 2.)

Fractures of the condyles of the femur, or head of the tibia, involving the knee, should nearly always be nailed or screwed.

Fractures of the femur, whether of the lower, middle, or upper third, or of the neck, will practically always give better results by operation, but the type of case most urgently demanding operation, is a more or less transverse fracture, at or about the junction of the middle and upper third, with the coëxistent deformity of flexion, and outward rotation of the upper fragment. Anything approaching a perfect anatomical or functional result without operation is impossible, and should not be expected, whereas operative treatment will give perfect results in the great majority of cases. (Figs. 3, 4.)

Impacted fractures of the neck of the femur in old people should, as a rule, not be disturbed, but unimpacted fractures should be treated by nailing, or the insertion of a bone plug, unless the patient is a prohibitive surgical risk.

The operative treatment of compound fractures, of malunited, and of ununited fractures does not fall within the scope of this discussion, and consequently I have not referred to it.

Case Reports

PENETRATING GASTRIC ULCER WITH SPECIMEN

By E. M. VON EBERTS

THE pathological specimen is from a female, aged fifty, who was admitted to the Montreal General Hospital on February 12th, complaining of "vomiting, indigestion, and distress after eating". There was nothing in the family or personal history of interest. The illness dated back twenty-eight years, when she had had an attack of vomiting, with pain in the epigastrium, the symptoms lasting for about four months. Subsequently there were recurrences of these symptoms at periods varying from eight months to a year, each attack lasting three or four months. The attack for which she entered hospital began on December 23rd, with pain in the upper abdomen and the vomiting of a quantity of dark brown material after taking food. Within twenty-four hours the bowel movement showed the presence of a large quantity of altered blood. The symptoms were all classical of peptic ulcer, that is, distress or feeling of weight in the epigastrium half to one hour after taking food, relieved by vomiting and by alkalis. These attacks lasted for two or three months, and then for a period of six months the patient would be free from symptoms. There was no nocturnal pain. The bowels throughout the twenty-eight years were persistently constipated.

When the patient entered hospital, there was found on examination tenderness close under the ribs on the left side. Pain, when present, was referred to a corresponding point in the back. Ewalds' test meal was given, and at the end of one hour 100 c.c. of residue of a brownish yellow colour was withdrawn, containing both macroscopic and microscopic blood. X-ray examination showed marked six-hour retention. It was considered that the case was one of peptic ulcer of the fundal portion of the stomach, most likely involving the posterior wall, as the pain was referred to the spine. Curiously, in view of the subsequent findings, the

Read before the Montreal Medico-Chirurgical Society, March 3rd, 1916.

Received for publication April 24th, 1916.

x-ray failed to show any bismuth deposit in the wall of the stomach.

An operation was performed on February 17th. When the abdomen was opened, the crater of a large penetrating ulcer on the posterior wall of the stomach could be felt, the opening into the perigastric space admitting the tip of the forefinger and the invaginated anterior wall of the stomach. A large perigastric mass was adherent to the pancreas. It was thought inadvisable to attempt to deal directly with the ulcer, and the ordinary no-loop posterior gastro-enterostomy was performed.

The patient made a good recovery from the operation. On the third day after operation the temperature was normal; pulse 96; and it was considered that convalescence was established. However, at noon on the fourth day the temperature rose to $101\frac{2}{5}^{\circ}$; the pulse to 120. Subsequent enemas were all effectual, but the patient rapidly sank, and died at four o'clock on the following day.

At autopsy there was found a general peritonitis, due primarily to perforation of the ulcer into the lesser peritoneal sac.

It is the consensus of opinion that one should not attempt to excise a penetrating ulcer of this extent involving, as this did, the pancreas in the perigastric adhesions, but that one should do a gastro-enterostomy in order to permit the entrance into the stomach of the alkaline pancreatic and biliary fluids, and in that way overcome the hyperacidity and promote healing.

LIVING CASE: CONGENITAL PYLORIC STENOSIS.

The case is that of a child of five weeks admitted to hospital February 10th. The child was born January 4th; normal pregnancy; normal delivery; the third baby; breast fed entirely. The present illness started at the end of the third week. After feeding the baby appeared to have pain in the abdomen, crying and drawing up the legs. The distress was only present for a short time, but recurred after each feeding. About this time the child began to vomit, and for several days before admission usually ejected the whole of the amount taken. The child had always been constipated, requiring a dose of olive oil every other day. On admission the child appeared to be well nourished and fairly well developed; cried a good deal, but did not appear to be in pain. The abdomen, when the child was lying quietly, showed no visible peristalsis. On palpation there appeared to be an elongated and freely movable mass to the right of the median line, above the umbilicus. This tumour was quite smooth; the long axis was placed in the horizontal

direction. The liver was palpable; the spleen was not palpable. It was thought that the child was suffering from intussusception. However, a copious high enema resulted in the passage of some flatus and a slight amount of faecal matter. The tumour disappeared. An hour later the child took the breast without subsequent vomiting. On the following day there was a healthy bowel movement in the morning, containing neither blood nor mucous. No tumour could be felt and the patient was discharged on February 11th, with instructions to the mother to bring the baby back for further observation. On the 14th the child was re-admitted. It had remained free from symptoms for a short time only after leaving the hospital; the bowels had not moved since. The child had nursed quite well for the first day, but for twenty-four hours before re-admission the previous symptoms had returned. The vomitus consisted entirely of milk; there was no faecal vomiting at any time. On re-admission there was observed marked peristalsis in the upper portion of the abdomen, starting from the left subcostal margin and passing to the right. The tumour previously noted could not be felt. The abdominal wall was soft; no apparent tenderness; child quiet under examination. On February 15th, the patient had an enema of plain water, which was expelled with small masses of hard, constipated stool; a soap-suds enema was more effectual, bringing away a large mass of dark formed stool; and a third enema was still more effectual. On the 16th the child showed the first signs of exhaustion, that is the periodical occurrence of symptoms of partial collapse, which is always a danger signal in these cases. The patient appeared very weak; the respirations were of the Cheyne-Stokes type with short periods of apnoea; temperature $101\frac{4}{5}^{\circ}$; pulse 140. It was realized that the condition was due to pyloric obstruction, although some of the classical symptoms of congenital pyloric stenosis, such as expulsile vomiting, had been absent. It was decided to open the abdomen at once.

When the abdomen was opened, the stomach was found to be enlarged, and the pylorus occupied by a firm muscular mass, estimated to be the size of the terminal phalanx of the ring finger. A posterior gastro-enterostomy was performed. The child made an uninterrupted recovery.

Editorial

THE ASSOCIATION

FOR various reasons, of which the most important was the enlistment of the Editor and the Secretary-Treasurer for overseas service, no report on the work of the Association for the year 1914 has as yet reached our members.

The last report published appeared in the September number for 1914, and we would remind our members that the financial statement for the year 1913 which accompanied this report showed a deficit of some two hundred dollars. The general condition of the Association appeared to be sound and the hope was expressed in the report that the year 1914 would see a surplus in place of this deficit. As a matter of fact, however, owing to various causes, the deficit was increased for 1914 to something over seven hundred dollars. The principal reasons for this additional loss were the comparatively small receipts at the St. John meeting and the loss of members through enlistment for service in the war.

With this deficit to face it was at once apparent, when the officers of the Association left for the front, that it would be impossible to continue the payment of their salaries to their successors and still keep the Association solvent.

It was also practically certain that a further loss of members would occur in 1915 through enlistment and that our finances would suffer correspondingly, and if we add to this the loss of receipts through postponement of the annual meeting it will readily be seen that the financial outlook was not bright.

It will be noted that the 1915 statement (published in this issue) shows a small surplus, but this was only obtained by reason of the services of the Acting Officers being given

gratuitously, the saving thus effected being about fifteen hundred dollars. This may appear satisfactory in so far as the actual condition of the treasury is concerned, but it is far from satisfactory if one looks at the general position of the Association.

At a meeting of the Executive Council held in Toronto June 2nd, of this year, two important questions were discussed. First, the financial condition of the Association, and second, the question of holding the annual meeting in 1917.

The postponement of the meeting of 1915 would appear to have been, for many reasons, the wisest course, and it was difficult under existing conditions to arouse enthusiasm for a meeting in 1916, so that this also was deferred, although suggestions that it be held in the East were made.

It is now becoming abundantly apparent that any further postponement will be highly detrimental to the interests of the Association. Upon the papers presented at the annual meeting the JOURNAL depends largely for its material, and the Association looks to it also for a considerable part of its revenue. But apart from these two very excellent reasons there still remains the great need of acquiring new members and the desirability of stimulating the enthusiasm of the old. If the Association is to continue we must have new members.

It has been decided therefore to hold a meeting in 1917, and it behooves every one of our members to begin now and plan what he individually may be able to do to make it a success. The time and place of the meeting will be announced later.

We would bespeak a careful perusal of the financial statements for the years 1914 and 1915 which will be found elsewhere in this JOURNAL.

No credit can be claimed by the Association for the existence of a small balance at the end of 1915. An important body like the Canadian Medical Association should be able to pay its officers adequate salaries, and it is apparent that this cannot be done under existing conditions.

REPORT OF THE SPECIAL ADVISORY COMMITTEE ON CEREBRO-SPINAL FEVER

THE "Report of the Special Advisory Committee upon Bacteriological Studies of Cerebro-Spinal Fever during the Epidemic of 1915," approved for publication by the Medical Research Committee of Great Britain in January, 1916, has just come to hand and makes interesting reading. It is an analysis and summary of twenty-four reports sent in from central and provincial cerebro-spinal fever laboratories established by the War Office, and refers, in addition, to the work of the Local Government Board laboratories and to various papers published in 1915 dealing with cerebro-spinal fever and its causal organism. The report confines itself mostly to bacteriological questions of a quite technical character, but sections on the larger questions of epidemiology and diagnosis, and a short review of the serum treatment, are included. The Committee asked for information particularly upon the following points: (1) Mode of spread of the disease. (2) Contacts. (3) Carriers. (4) Incubation period, diagnosis, and specific treatment of cases of cerebro-spinal fever.

The specificity of the meningococcus is affirmed and "pleomorphism" denied, the biological characters of the other Gram-negative cocci of the upper respiratory tract being sufficient to differentiate these from the meningococcus. It is pointed out, however, that there is strong evidence in favour of "immunological races," or strains, of the meningococcus, and that there are two principal "epidemic types" which are responsible for at least 80 per cent. of the cases in the recent epidemic. It is hoped that these observations will result in the production of efficient homologous sera for the recognition and treatment of the principal types of meningococcal infection. The reporters are practically unanimous in affirming that the diagnosis of cerebro-spinal fever from examination of the cerebro-spinal fluid is trust-

worthy, when both microscopic examination and cultures are employed. Failure to find the organism may occur in fulminant cases, in the earliest stages of ordinary attacks, in abortive cases, in the later stages of chronic cases, and sometimes after intraspinal injections of antimeningococcal serum. Blood cultures appear to have been seldom made, and the routine examinations of the pharynx for meningococci was not carried out with the same thoroughness as the examination of the spinal exudate. The Committee thinks that there is need of fuller data in both of these matters. On the other hand routine examination of the pharynx of "contacts" with cases of cerebro-spinal fever has been practised by the majority of the reporters for the purpose of detecting carriers. The important conclusions in this respect are that immediate cultures from the swabs are essential to success, as drying soon destroys the vitality of the organism, and that salivary contamination must be avoided preferably by the use of a curved protecting tube. The Committee thinks that with such precautions the method will give better results than those reported, and is essential for determining the mode of spread of the disease and the possibility of its control. The conditions which favour "positive contacts" are chiefly overcrowding and insufficient ventilation of rooms, especially if used for meals. A plea is made for a widespread "carrier census" among the population at large, in non-epidemic as well as in epidemic years, for the purpose of clearing up the incidence of cerebro-spinal fever. From the statistics given there is evidently a wide variation in the duration of the carrier condition in different individuals, but the majority are free from infection in a week to ten days. Naso-pharyngeal disease does not play any part in prolonging the duration of the carrier condition according to most of reporters, and no treatment—immunization, antiseptics, etc.—seems to have any appreciable effect. An open-air life appears to be the best remedy.

The section on epidemiology is specially interesting.

"The question is one of the transfer from pharynx to pharynx of an organism having little vitality and no power of growth outside the animal body, and is the same in principle as that involved in the spread of such diseases as influenza and common catarrhs." Two individuals who daily swabbed carriers, without wearing masks, gave positive swabs after ten and fourteen days respectively. As the meningococcus is present only in the posterior walls and pharynx, it is only in explosive expiration—coughing and sneezing—that there is any probability of transference directly from one individual to another, but table utensils may cause the infection indirectly.

The statement is made that the experience of the recent epidemic "appears to show that the risk of direct infection from case to case is seldom great." In Salisbury Plain "not a single person in attendance on the cases suffered and not a single nurse or hospital orderly became even a positive contact."

"It may be concluded from these facts that the direct source of infection in cerebro-spinal meningitis is usually to be sought not in another case of the declared disease, but in the undeclared carrier." This is perhaps the most startling conclusion of the whole report. Among the accessory factors which favour the spread of cerebro-spinal fever are mentioned military movements, weather, overcrowding and deficient ventilation, fatigue, and other doubtful causes.

The only one which we need refer to is the first, as it directly concerns us. The statement is made that "the reports from the Salisbury Plain area suggest, not indeed that the Canadians imported a new disease into this country, for we have always had it with us in sporadic form, but that they did introduce a virulent strain of meningococcus and were in some degree responsible for its spread." Though coming from such an authoritative body as the Special Advisory Committee and published with the approval of the Medical Research Committee, it may be questioned whether

the "suggestion" is really one which was entitled to be made on the basis of the facts recorded. It is admitted in the report that "we (in England) have always had it in a sporadic form", and it is also true that culturally no difference has been detected between the strains isolated from Canadian cases and British cases. All the strains recognised by Arkwright and Ellis have been found in Canadian and British cases. It is quite possible that members of the same strain may exhibit different grades of virulence, and true that a severe epidemic of the disease did attack Salisbury City after the disease had shown itself upon the Plain. This epidemic was not more severe than that of Belfast some few years ago.

Passing to the question of the incubation period, the report emphasizes the saprophytic character of the meningococcus in the pharynx, in only a small proportion of the cases proceeding to secondary invasion of the body to constitute an attack of cerebro-spinal fever. Hence the difficulty of estimating the incubation period. In a few cases it has been possible to be certain. It may be as short as three or four days.

The most important general conclusion as regards epidemiology is the hypothesis, from the data given, of a "saprophytic epidemic" of the meningococcus in the throats of the population at large prevailing especially in winter and early spring, and giving rise under certain conditions to outbreaks of cerebro-spinal fever, which is thus, in the words of the report, "an epiphenomenon of the (saprophytic) epidemic." The section on treatment is very brief and rather iconoclastic. The reporters' experience with anti-meningococcal sera from four different sources (Flexner's, Mulford's, Burroughs Wellcome & Co.'s, and the Lister Institute's) has not been brilliant. The question might be asked if some of these sera have not deteriorated since they have become commercialized.

The early experience with Flexner's serum in this country

seemed to justify the very high praise accorded it. And in this connexion it might be mentioned that recent reports of the use of the serum prepared by the Ontario Board of Health have been very favourable. No other form of treatment seemed to do any good, save repeated spinal punctures, and in two cases the intraspinal injection of serum from a patient who had recovered from an acute attack. The committee holds that "until the type of coccus in individual cases is determined, and the homologous serum employed, it may justly be said that the serum treatment of cerebro-spinal fever has not had its fairest chance."

SOLDIER'S HEART AND THE HAMPSTEAD HOSPITAL

A LEADING article in a recent issue of the *London Times*, as well as several communications in current British medical periodicals, draw the attention of the public to the important fact that the large number of soldiers invalided home by the now well recognized functional disturbance known as Soldier's Heart, in which symptoms of a more or less transient cardiac exhaustion form the predominant feature, has led to the opening of an investigation, and to the organization of a military heart hospital at Hampstead, London, designed especially for the study and treatment of such cases. The investigation was opened by the Medical Research Committee of the National Insurance Act, on the initiative of Sir Alfred Keogh, and was entrusted in the first place to Sir James Mackenzie,* who with Dr. R. McD. Wilson* opened a discussion on this subject before the Royal Society of Medicine on January 18th last, and reported the results of observations made by himself in collaboration with Dr. Wilson on four hundred cases. He pointed out that the large class of patients under consideration differ essentially from the subjects of organic heart disease both in the milder grade of symptoms, the more

* *Brit. Med. Journ.*, January 22nd, 1916.

favourable prognosis and the form of treatment indicated. In the latter connexion he laid down the important principle that complete rest was not advisable except in the early stages, and that fresh air, graduated exercises, recreation and cheerfulness take an important part in the rehabilitation of the patient, so that officers should be sent off on golfing or fishing tours, and light games in out-door surroundings should be provided for the private soldiers, with the one injunction to both that such occupations be carried on only to the point of pleasurable enjoyment and never to fatigue. In addition he stated that the proper investigation and treatment of such cases required the provision of a special hospital with complete equipment and in suitable surroundings.

These views were shared by Sir Clifford Allbutt and Sir William Osler, who, with Sir James Mackenzie, have organized the new hospital, and with Major J. C. Meakins and Captain F. C. Cotton are among the members of its staff. The article in the *Times* reads: "Sir Alfred Keogh (Director General of Medical Forces), decided to open a special hospital of a very special kind, and recognizing the value of a bright and bracing situation chose the Military Hospital at Hampstead for the new Heart Hospital. How carefully the staff was selected may be seen by a glance at the list of names. The new hospital is not more fortunate in its staff than it is in its commanding officer, Colonel More Reid, who brings a wide knowledge and a broad sympathy to bear upon its many problems." The new hospital is fully equipped with bacteriological laboratory, electrocardiograph with wired connexions to the wards, orthodiagraph, and x-ray instalment. The Mackenzie ink polygraph is in active operation and individual assistants are giving their whole time to the study of vasomotor reflexes, dermatographic and precise orthodiagraphic cardiac tracings, exercises, gas analysis, and other phases of the many problems investigated. Here the scientist and clinician are united, and the mental factor, which means so much, especially in this type of case,

is given due prominence. As in all army hospitals military considerations, of course, take the first place in the handling of the patients, the cases being as far as possible classified on arrival into those who will be again fit for active service and those who will not. In subsequent treatment the latter class are boarded out of the army, while in the former the myocardium is re-educated by graduated exercises to a point where the definite amount of exertion, such as half an hour's strenuous Swedish drill, or a seven mile route march with a twenty-five pound pack, can be undergone without symptoms. When this point is reached the men are considered fit to return to their unit.

The importance of this new hospital, which is in a sense a departure, can hardly be overrated. By accelerating the return to duty or invaliding from the service of the disabled soldier it will mean a saving to the State, and it constitutes one of the most interesting examples we know of the remarkable organization that has taken place in this war of preventive and therapeutic forces for the mitigation of the effects upon our soldiers of the terrible conditions of modern warfare.

The recent policy of the War Department in establishing these special hospitals, such as are illustrated by the one under discussion, and by the Eye Hospital at Bramshott with which Lt.-Col. Hanford McKee is associated, is to be especially welcomed, for only in this way can the powers of the many trained specialists who have placed their services at the disposal of their country be utilized, and it is obviously a waste of efficiency (though sometimes a necessity) to place such men in the field. Moreover, the establishment of this particular form of special hospital in England, which may be called the home of graphic methods, under the administration of a staff, whose chiefs are themselves the leaders of thought in the new school of cardiac pathology, with the control of a wealth of clinical material consisting chiefly of soldiers suffering from functional disorders of the cardiac mechanism, opens an extraordinary productive field of study

which is bound to bring far-reaching advances in our knowledge of cardiac pathological physiology on the one hand, and its therapeutics on the other. It is a matter of congratulation to us that two members of the staff are Canadians. Major J. C. Meakins, of the Royal Victoria Hospital, Montreal, was transferred to the staff from No. 3 Canadian General Hospital (McGill), in February, 1916, at the time of the organization of the Hampstead Hospital, and Captain T. C. Cotton, of the Montreal General Hospital, was appointed to Sir James Mackenzie's staff early last autumn. Both are men with faculties made expert by previous training in the Mackenzie-Lewis School, and whose names are associated with the publication of some of its previous researches,* who are competent to bring back to Canada the fruits of the observations made.

The history of this subject is of interest. The "irritable heart of the soldier" is no new condition, but was recognized as far back as the American Civil War, when it attracted wide attention. A classical description, corresponding in all respects to the picture as presented to-day is given by Dr. Hathorn in the *American Journal of Medical Sciences* for 1864, and in the same journal for 1871, Da Costa reviewed the subject upon the basis of a series of three hundred cases collected in a hospital in Philadelphia. The condition is characterized by signs of vasomotor instability, aching precordial pain, a sense of exhaustion amounting often to giddiness or faintness, general malaise, rapid pulse on exertion, slight breathlessness, at times slight oedema of the feet, mental depression, and nervous irritability. There is usually a slight rise of temperature especially at the onset, which is often with diarrhoea and other digestive disturbances. It is to be understood that only the most serious cases of cardiac instability are sent to England. Mild cases are looked after in France.

An interesting discussion upon the etiology of soldier's heart has occupied several of the British journals during the

* *Heart*, vol. v.

past six months. Sir James Mackenzie with W. Bezley Thorne,* R. McD. Wilson, and others, regard it as one symptom of a general physical exhaustion, the result in the majority of the cases of a latent infection which becomes active under the effect of strain or shock and produces the general effects of a toxæmia, which yields to the raising of the resistive powers of the individual by good hygiene, fresh air, and cheerful occupation. This view is supported by the experience at the hospital since its organization where the accumulation of facts is tending to show that the so-called soldier's heart results in nearly 80 per cent. of the cases from infectious disease, of which rheumatic fever holds the leading place. But it is rendered doubtful by the experience of Dr. R. D. Rudolf, of Toronto, who writes us that in the Medical Division of No. 2 Canadian General Hospital in France, of which he was in charge, every well marked case of cardiac instability was tested for the presence of streptococci with a negative result in every case.

The application of this theory of latent infection to all the cases is further disputed by Poynton,† Morison,‡ and others. They point out that identical symptoms come on quite suddenly after shell shock and other states in which the predominant feature is nervous or physical strain, and the question has been raised as to whether, under these circumstances, the shock itself may not generate toxins within the body producing a similar result upon the tissues as those having a true infective origin. Others point out that chemical poisons, as nicotine, produce the practically identical condition of tobacco heart, and believe that this is undoubtedly the cause in a large percentage of the cases. Finally, it has been shown (White and Johnston, § Stoney ||), that some cases of soldier's heart present the early stages of exophthalmic goitre, what may be called a pre-Graves condition of hyper-

* *Practitioner*, May, 1916.

† *Brit. Med. Jour.*, November 20th, 1915.

‡ *Brit. Med. Journ.*, January 29th, 1916.

§ *Lancet*, January 8th, 1916.

|| *Lancet*, April 8th, 1916.

thyroidism, and which yields to x-ray treatment of the thyroid gland. When it is remembered that shock or emotion of any kind is a strong predisposing cause of goitre this forms a comparatively small but suggestive group.

From many sides the further suggestion has come that all such etiological factors as the above mentioned act similarly within the organism, producing analogous states of cardiac and physical exhaustion. This theory has been advanced, quite independently of the British writers, by Crile in a most interesting form in his book on "A Mechanistic View of War and Peace," and in his article on "The Kinetic Drive,"* in which he suggests that all such etiological factors, latent infection, powerful emotion, physical strain, exaggerated hormonal action, may be considered in the light of activators which "set the pace" for an undue transformation of energy leading to alterations in the relation of the volatile and nonvolatile acids of the blood and other disturbances of the metabolic equilibrium with the consequent histologic and chemical changes that constitute fatigue.

It is too early for conclusions or even for surmises upon the outcome of these and the many other problems involved, but it is easy to see that the profession is likely to owe an incalculable debt of gratitude to the originators of the Hampstead Hospital, Sir Alfred Keogh, Sir James Mackenzie, Sir Clifford Allbutt, and Sir William Osler.

A QUESTION of particular interest to the country practitioner was debated before the Railway Commission on May 17th. Complaints have been made by several medical men that the railway companies have refused to stop freight trains when no passenger trains were available on which a doctor might travel who was going to an urgent case of accident or illness. The Commissioners were of opinion that such trains should be stopped when required, but no definite decision was arrived at since all the railways were not represented.

* *Journ. Amer. Med. Assoc.*, December 18th, 1915.

THE Faculty of the New York College of Physicians and Surgeons recently expressed itself as unanimously in favour of the establishment of a dental department. The plans were prepared by a committee of prominent dentists and were duly approved. The new school will be closely associated with the medical school and the requirements for admission will be the same. A four year course will be given. The first two years will be the same as in medicine, thus giving the dental student a thorough knowledge of the fundamental sciences; the rest of the course will be devoted to the study of operative dentistry, prosthetic dentistry, oral surgery and pathology, orthodontia, and the more technical part of the work of a dental surgeon.

A MEDICAL MISSION was recently appointed by the United States authorities to study war conditions in Europe. Its members—Colonel Bradley, Major Lyster, and Major Ford, of the United States army, and Surgeon Pleadwell, of the United States navy—were entertained to dinner at the Athenæum Club, London, on May 24th by Director-General Sir Alfred Keogh and Sir William Osler. Among those present were the American Ambassador, and a number of officers of the Royal Army Medical Corps, the Canadian Army Medical Corps, and the Medical Service of the Royal Navy. It is the intention of the members of the mission to make an inspection of the system of dealing with the sick and wounded in England and a study of the hospitals and other medical arrangements in France.

THE Canadian Hospital at Dinard was formally opened by President Poincaré on April 15th, last. This hospital, No. 4. Canadian Stationary Hospital, was presented to France by the Canadian Government and has been receiving patients now for more than a year. The unit was recruited in Montreal and is under the command of Lieutenant-Colonel Mignault, of Montreal. President Poincaré was accompanied by Gen-

eral Depages, aide-de-camp; M. Justin Godart, director of the French Service de Santé; M. Hanotaux, of the Académie Française; the President of the Société France-Amerique, and others. Sir George and Lady Perley, and Surgeon-General Carleton Jones, C.M.G., director of the Canadian Medical Services, and the Honourable Philippe Roy, Canadian Commissioner in Paris, were also present. The President inspected everything with much interest; he enquired about the nature of the wounds sustained by each of the one hundred and fifty-five patients then in the hospital, and spoke a few words of encouragement to each man, presenting some with the Croix de Guerre or the Médaille Militaire. The wooden huts that have been built for those who are very badly wounded bear Canadian names, such as Quebec, Halifax, Three Rivers, Argenteuil, and over the portal of the latter the names Wolfe and Montcalm are inscribed. The total number of beds in the hospital is now five hundred, but it is probable that the Laval unit, No. 9 Canadian General Hospital, which is now in England under the command of Colonel Beauchamp, of Montreal, will be sent to Dinard.

MONTREAL has long enjoyed the unenviable reputation of having one of the highest infant mortality rates in the world. Some improvement has been made by the establishment of milk stations in the poorer districts of the city, and in 1914 the death rate amongst infants of not more than one year of age was 17.95 compared with 21.52 per thousand in the previous year; the figures for 1915 have not yet been published. The great difficulty, however, has been that much of the milk supplied in Montreal has been below the standard established by the municipal regulations and, moreover, has been extremely dirty. The milk dealers have sheltered themselves behind the contention that the city bylaws were invalid and that the matter rested with the Federal government alone. This meant that each conviction would have to

go before the Federal courts and the milk would have to be examined by an analyst employed by the Dominion government, at a cost of from \$2.50 to \$5.00 for each analysis. The expense incurred by such a procedure has been prohibitive and, consequently, the health authorities have been powerless to do anything to improve the situation. The important judgement given by Mr. Justice Greenshields, however, in the case of Savaria vs. the city of Montreal, establishes the validity of the milk-bylaws. Savaria was convicted last November and sentenced to a fine for having in his possession, with intent to sell in the city of Montreal, milk below the standard established by the civic bylaws. An appeal was entered and the case was taken before the Superior Court. In rendering judgement His Lordship declared that, in 1851, when the Charter of Montreal was consolidated, the city council was empowered to enact bylaws "for the good rule, peace, welfare, improvement, cleanliness, health, internal economy, and local government of the city." The British North America Act did not interfere with legislation already passed by the various provinces coming into Confederation, and later the Quebec legislature extended the powers of the city council of Montreal with regard to the regulation of milk.

THE following is taken from a recent issue of the *British Medical Journal*: "A Congress was held in Berlin early in February to discuss the care and education of crippled soldiers. An exhibition of artificial limbs and other devices for helping cripples to become self-supporting was also held. It was stated that in Austria this problem had been dealt with so drastically that it was impossible for a cripple to refuse treatment, and that in Hungary a special commission had been appointed, with powers to refuse pensions and every other compensation to cripples who would not be treated. Another speaker gave an account of the numerous institutions which had sprung up in connexion with the education of

cripples. He described how "compensation psychoses" were discouraged, and how the paramount importance of regaining their capacity for work was impressed on soldiers early, the healing of their wounds being treated as a secondary consideration. At the outbreak of the war there was hardly a single institution in Austria for the treatment and education of cripples. The initiative, ingenuity, and capacity for organization shown by Spitzzy had done much to promote the welfare of the crippled soldier. His hospital contained 3,500 beds, 1,300 of which were devoted to soldiers with amputated limbs. The hospital included twelve different departments; one ward was set apart for wounds of the knee, another for wounds of the finger and so on. About three fifths of all the crippled Austrian soldiers had previously worked on the land, and new occupations on the land were chosen for them. Professor Dollinger said that in Hungary about 5,000 beds had been set apart for crippled soldiers, and institutions had been organized for the education of cripples, usually with a view to farm work. Dealing with the problems of artificial limbs, one speaker insisted that success depended much more on the cripple's desire to work than on the nature of the artificial limb. The standardization of every artificial limb was also insisted upon in order that the whole or part of such a limb could easily be replaced. It was also generally agreed that crutches should be dispensed with as early as possible and the cripple be given some temporary artificial limb, be its construction ever so primitive. In this connexion the plaster-of-Paris limb was warmly recommended."

Miscellany

Book Reviews

OBSTETRICS: A PRACTICAL HANDBOOK FOR STUDENTS AND PRACTITIONERS. By EDWIN BRADFORD GRAGIN, A.B., A.M. (Hon.), M.D., F.A.C.S., professor of obstetrics and gynecology, College of Physicians and Surgeons, Columbia University, New York; assisted by GEORGE H. RYDER, A.B., M.D., instructor in gynecology, College of Physicians and Surgeons, Columbia University, New York. Illustrated with 499 engravings and 13 plates; 835 pages. Lea & Febiger, Philadelphia and New York, 1916. Price, \$6.00 net.

In his preface to this work Dr. Gragin states that for some years he has felt the growing sense of a duty to place before the profession and students of medicine the methods followed in the Sloan Hospital of New York City, and the results obtained.

A protracted service as medical head of that institution, and many years of experience gained in a large private practice, qualify this author in an exceptional manner to fulfil the obligation.

Naturally from the association of the authors with the Sloan Hospital, this text-book of obstetrics, in the methods advocated, is based upon the extensive and carefully recorded statistics of that institution. Thus it constitutes a most valuable contribution to American statistics in obstetrics.

The arrangement of the subject matter is in general that conventionally followed, the only exception being that multiple pregnancy is included in Part II, under physiological pregnancy; the reason given being that as a rule multiple pregnancy is physiological and the labour not abnormal. While this may be granted, exception may be taken to the authors having included under the same heading dystocia consequent upon multiple pregnancy "in order to avoid a division of the subject of multiple pregnancy, and a separation of the parts by many intervening chapters."

In the section on mechanism, there seems to be some un-

necessary repetition and at times lengthy reference is made to the management which might be better taken up in the succeeding chapter which is devoted to the management of labour.

In the description of the mechanism of flexion of the head on page 259, the following statement is made: "Full flexion of the head does not occur until the head is on the pelvic floor, for usually there is no resistance until this is reached." The inference then is that the pelvic floor contributes to flexion of the head. Surely it has long been established that unless flexion is well established *before the pelvic floor is reached*, in vertex presentations, the course of labour becomes abnormal.

In the section dealing with toxemia of pregnancy it is stated that in the experience of the author the cases of pernicious vomiting have shown, as a rule, a high ammonia nitrogen, and a low urea nitrogen, and as the patient has become worse the percentage of ammonia nitrogen has increased and that of urea nitrogen decreased. Furthermore, as the patient improved the opposite condition has prevailed.

Is not this what would be found in the urine of any starving pregnant woman, may well be asked, especially as later on the author admits "that occasionally a careful study of the clinical picture of the patient will show an improvement before the laboratory findings?"

One notes that in the treatment of threatened eclampsia that veratrum viride and nitro glycerine are recommended in preference to venesection to reduce the blood pressure. Chloral in full doses is commended to control restlessness. For the last ten years the rule at Sloan has been that "given an eclamptic seizure, or a toxemia so severe as strongly to threaten eclampsia in spite of treatment, proceed to empty the uterus." To show that chloroform may contribute to accentuate the injuries caused by pregnancy toxemia, when employed as an anæsthetic, the authors give the following statistics: "In twenty thousand deliveries in which chloroform was used in all cases, there were two hundred and fifty-one cases of eclampsia; in eight thousand deliveries in which ether was used in all toxemic cases there were only seventy-one cases of eclampsia."

The authors state that the attempt to employ ether in all cases of labour at Sloan was followed with such unsatisfactory results they were obliged to return to the use of chloroform in all cases where evidences of a toxemia were absent.

The chapters dealing with abortion and ectopic gestation are to be specially commended.

Premature rupture of the membranes besides being responsible for an increase in the foetal mortality in labour, contributed, especially in those cases in which the pains failed to come on for several days subsequently, to a definite increase in the maternal morbidity in the puerperal period. For these reasons the authors recommend that in all cases where uterine contractions have not been effective in starting dilatation of the os uteri in twenty-four hours after the rupture of the amniotic sac has taken place, resort should be had to the hydrostatic bag.

The book is interesting throughout and is at once a credit to the distinguished author and his assistant, and to American obstetrical literature. The style is clear and practical, and as a guide to the practitioner in obstetrics no better work has been published in the English language.

This text-book is specially to be commended to the undergraduate because of its characteristic simplicity, directness, and sane common sense.

The illustrations, most of them original, are extremely well selected and wisely employed, with the possible exception of the repetition of those on pages 178 and 254.

The publishers work has been excellently accomplished, and the result is a book of a size easy to handle and delightful to read.

INFANT FEEDING AND APPLIED TOPICS FOR PHYSICIANS AND STUDENTS. By HARRY LOWENBURG, A.M., M.D., assistant professor of pediatrics, Medico-Chirurgical College of Philadelphia. Illustrated with 64 text engravings and 30 original full-page plates, 11 of which are in colours. Philadelphia: F. A. Davis Company, publishers. 1916. Price, \$3.00, net.

In this work along with chapters on infant feeding, there are included several dealing with rickets, scurvy, vomiting, diarrhoea, constipation, spasmophilia, exudative diathesis, and pyloric obstruction.

The author has been strongly influenced by the German school of pediatrics and the book is founded on his personal experience; it is therefore practical in character. The dilution of whole, or of skimmed, milk is advocated as a simple and efficient method of feeding infants, and individualization is insisted upon as a basic principle. The caloric system is discussed and its advantages and disadvantages pointed out.

Books Received

The following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.



THE PRACTICAL MEDICINE SERIES: COMPRISING TEN VOLUMES ON THE YEAR'S PROGRESS IN MEDICINE AND SURGERY. Edited by CHARLES L. MIX, A.M., M.D., professor of physical diagnosis in the Northwestern University Medical School. Vol. I, GENERAL MEDICINE, edited by FRANK BILLINGS, M.S., M.D., head of the medical department and dean of the faculty of Rush Medical College, Chicago. Series 1916. Publishers: The Year Book Publishers, 327 S. LaSalle Street, Chicago. Price, \$1.50. Price of the series of ten volumes, \$10.00.

DISEASES OF THE NOSE AND THROAT: COMPRISING AFFECTIONS OF THE TRACHEA AND OESOPHAGUS. A text-book for students and practitioners. By SIR ST. CLAIR THOMSON, M.D., F.R.C.P., F.R.C.S., commander of the Order of Leopold of Belgium. Second edition, 858 pages with 22 plates and 337 figures in the text. Publishers: London, Cassell & Company; Toronto, McAllister & Company, 1916. Price, \$7.50.

THE SEX COMPLEX: A STUDY OF THE RELATIONSHIPS OF THE INTERNAL SECRETIONS TO THE FEMALE CHARACTERISTICS AND FUNCTIONS IN HEALTH AND DISEASE. By W. BLAIR BELL, B.S., M.D., Lond., examiner in gynaecology and obstetrics to the University of Belfast. 233 pages. Publishers: Baillière, Tindall and Cox, 8 Henrietta Street, Covent Garden, London, 1916. Price, 12s. 6d. net.

COLLECTED PAPERS ON ANALYTICAL PSYCHOLOGY. By C. G. JUNG, M.D., LL.D., formerly of the University of Zurich. Authorized translation edited by DR. CONSTANCE E. LONG, medical officer, Education Board. 392 pages. Publishers, Baillière, Tindall and Cox, 8 Henrietta Street, Covent Garden, London, 1916. Price, 12s. 6d. net.

Obituary

DR. HERBERT SMITH, of Burin, Newfoundland, died May 22nd, after a brief illness. Dr. Smith, who was sixty-seven years of age, was born in Bermuda and was the son of the late Reverend Thomas Smith.

DR. HOWARD F. LYSTER, of Hull, Quebec, died May 19th, in the forty-fifth year of his age. Dr. Lyster was born in Montreal and graduated from McGill University in 1896. He first went into practice at Melbourne, Quebec, but soon removed to Hull. He was appointed coroner for Ottawa County in 1907, upon the retirement of Dr. C. E. Graham.

DR. J. EDGAR JONES, of Digby, Nova Scotia, died from heart failure May 18th, in the seventy-ninth year of his age. Dr. Jones was born in Pictou County and practised for some time at Westport, removing from there to Digby. He was elected mayor of Digby by acclamation for four terms and three years ago received the appointment of postmaster there.

DR. W. J. GRAHAM died at Springfield, New Brunswick, on May 18th. Dr. Graham was born in Birkenhead, England, and came to Canada about five years ago. He was engaged as surgeon on the Transcontinental Railway.

CAPTAIN DOUGLAS WATERSTON, M.D., C.A.M.C., who was killed in action about May 22nd, was the son of Thomas Waterston, of Montreal, and grandson of Captain J. B. Waterston, who commanded British transports during the Crimean War and whose death occurred in Montreal on May 21st, the day before Dr. Waterston was killed. Captain Waterston left Montreal with the 9th Field Ambulance, C.E.F., and had been at the front only about six weeks. He graduated from McGill University two years ago and was then appointed house surgeon at the Montreal General Hospital. He joined the C.A.M.C. early in 1915 and was attached to the Montenegrin Camp at Three Rivers for a time. He was twenty-six years of age and was born at Belleville, Ontario.

CAPTAIN N. J. L. Yellowlees, M.D., C.A.M.C., of Toronto, was reported to have died on service in the casualty list published on May 11th. He is reported to have been drowned at Salonica while attempting to reach a wreck on horseback. The accident was witnessed by a party of nurses from the Toronto University Hospital (No. 4 Canadian General Hospital), the unit to which Captain Yellowlees was attached. Dr. Yellowlees was born in 1886 and graduated from the University of Toronto in 1909. He was in practice in Toronto.

LIEUTENANT-COLONEL ARTHUR WILLIAM TANNER, C.A.M.C., of Moosomin, Saskatchewan, died June 5th, of wounds received while advancing to a dressing station. Before going to the front, Lieutenant-Colonel Tanner was A.D.M.S. for military district No. 10, with headquarters at Winnipeg. He left Winnipeg shortly before Christmas last year in command of the 10th Field Ambulance. As a practitioner Lieutenant-Colonel Tanner was well known in Saskatchewan and had been in practice at Moosomin since 1902. He was a member of the town council for six years and mayor of Moosomin for two years. He was in the forty-second year of his age and leaves a widow and four young children.

News

MARITIME PROVINCES

A REPORT on conditions existing at the Infectious Diseases Hospital was recently submitted to the Halifax Board of Health by Dr. N. E. McKay. The report stated that, in the opinion of Dr. McKay, the hospital was not fit for the purpose for which it was used and that the whole of the interior would have to be torn down and renewed and the hospital enlarged before it could be made even passably suitable; that the location was not convenient; and that it would be better to build a new hospital on modern lines in a more convenient place. The present superintendent of the hospital is a layman and there is no graduate nurse on the staff. Dr. McKay recommends that a capable and experienced graduate nurse be placed in charge of the hospital, since at present the hospital authorities cannot afford to engage a resident house physician. Reference was made also to the provision of food for patients and staff and it was suggested that this matter be attended to by the

hospital board and not left in the hands of the superintendent, who had received during the twelve months just ended \$7,772.81 for food alone.

THE thirty-third annual report of the Prince Edward Island Hospital was published at the beginning of last month. The financial statement for the year closed with a deficit of \$163.98, the receipts amounting to \$16,115.22 and the expenses to \$16,279.20. The deficit last year was \$263.26, so that the total deficit on current account amounts to \$427.23. Outstanding accounts, however, amount to more than this. The number of patients who received treatment during the past year was 562, as compared with 417 during the previous year, and the days of treatment given during 1915-1916 were 12,926 compared with 8,563 during the previous year. The hospital now contains accommodation for about sixty patients.

THE plans have been prepared for the new Fraser building to be added to the Victoria Public Hospital at Fredericton.

ONTARIO

THE distinction of C.M.G. has been bestowed by His Majesty upon Dr. Frederick Montizambert, I.S.O., Director-General of Public Health of Canada.

THE following is the list of communicable diseases reported in the Province of Ontario during the month of May: measles, 2,980 cases, 14 deaths; diphtheria, 170 cases, 7 deaths; scarlet fever, 120 cases, 7 deaths; whooping cough, 160 cases, 10 deaths; tuberculosis, 175 cases, 82 deaths; smallpox, 10 cases; infantile paralysis, 1 case; cerebrospinal meningitis, 7 cases, 4 deaths.

MAJOR R. K. KILBORN has given up his position as medical officer at the Royal Military College, Kingston, on account of ill health. Dr. Kilborn has occupied this post for sixteen years.

THE Lady Minto Hospital at Cochrane was formally opened on May 24th. At the time of the opening seven patients were already in the hospital.

DR. STANLEY has been appointed medical officer of health at

St. Mary's for the remainder of the year, in succession to Dr. Fraleigh who will leave shortly for service overseas.

THE following is the list of candidates who have passed the spring examinations of the College of Physicians and Surgeons of Ontario: W. H. T. Baillie, of Toronto; J. E. Barry, of Toronto; N. W. Bragg, of Brantford; P. B. Brown, of Toronto; B. R. Burwash, of Baltimore, Ontario; G. M. Cameron, of Hamilton; D. Corcoran, of Toronto; P. W. M. Curry, of Trenton, Ontario; L. W. Dales, of Drayton, Ontario; G. A. Davis, of Toronto; J. A. Dickson, of Toronto; H. B. Freel, of Stouffville, Ontario; G. M. Geldert, of Ottawa; A. E. Gillies, of Port Hope; J. Z. Gillies, of Toronto; W. C. Givens, of Toronto; E. A. Goode, of New York; S. G. Graham, of Lobo, Ontario; A. C. Greenaway, of Woodville, Ontario; H. C. Hagyard, of Milton, Ontario; J. E. Hawkings, of London, Ontario; H. B. Hetherington, of St. Catharines; L. R. Hill, of Toronto; W. E. Hodgins, of Lucan, Ontario; A. B. Hyndman, of Merrickville, Ontario; A. B. Jackson, of Simcoe, Ontario; R. M. Janes, of Watford, Ontario; A. W. Knox, of Loughheed, Alberta; J. H. Leeds, of Galt; G. T. Lewis, of Windsor; A. R. Lindsay, of Toronto; N. H. Little, of Trenton, Ontario; D. McC. Livingstone, of Collingwood; W. A. Lowe, of Haileybury; A. J. MacCallum, of Owen Sound; A. R. MacDonald, of Jarvis, Ontario; W. MacK. MacKay, of Cornwall; J. A. MacMurchy, of Acton, Ontario; H. B. Maitland, of Toronto; D. C. Matheson, of Kingston; O. W. Mitton, of London, Ontario; A. McCallum, of Toronto; F. L. McCarroll, of Thornepayne, Ontario; J. E. McCorvie, of Chatham; W. P. McCowan, of Toronto; J. C. McCullough, of Walter's Falls, Ontario; J. L. McDonald, of Toronto; D. C. McFarlane, of Dorchester, Ontario; W. J. McLean, of Blind River, Ontario; G. D. McTaggart, of Hamilton; A. H. Naylor, of Lindsay, Ontario; A. C. Norwich, of Toronto; O. G. Patterson, of Toronto; E. E. Phoenix, of London, Ontario; H. O. Pope, of Bothwell, Ontario; G. W. Renton, of London, Ontario; R. B. Robson, of Petrolea; J. G. Ross, of London, Ontario; W. V. Sargent, of Kingston; P. A. Sarjeant, of Barrie; G. Scullard, of Chatham; J. H. Sharpe, of Toronto; E. E. Shouldice, of Calgary, Alberta; H. A. Simpkins, of Thamesville, Ontario; T. A. Sinclair, of Walkerton; R. J. Snider, of Toronto; S. S. Solway, of Fort Frances, Ontario; F. Spearing, of Batteau, Ontario; A. L. Speers, of Merton, Ontario; G. H. Stobie, of London, Ontario; B. C. Switzer, of Toronto; G. E. Tanner, of Sarnia; R. H. Taylor, of London, Ontario; F. F. Tisdall,

of Toronto; C. H. Warriner, of Toronto; C. J. McN. Willoughby, of Toronto; F. B. Gladstone Wilson, of Toronto; M. J. Wilson, of Toronto; A. M. Young, of Binbrooke, Ontario; D. R. Young, of Thamesford, Ontario; H. G. Young, of St. Mary's; and W. L. Yule, of Logansport, Indiana.

THE following have been appointed house surgeons at the Victoria Hospital, London: Drs. Stanley Murray, A. McKay, D. D. Ferguson, L. M. Jones, and Renwick.

AN inspection was recently made by Dr. Howitt, medical officer of health, of the pipe line through which Guelph receives its water supply. In a report submitted to the Board of Health, Dr. Howitt stated that the water supply is now in a worse condition than ever. In January, 1915, the provincial board of health drew attention to the contaminated condition of the water. Since then a new pipe has been installed up to a certain point where it connects with the old pipe which is of glazed tile and consequently permeable where the joints occur; the new pipe is of iron but has two six-inch diameter vent holes which permit the swamp water to flow into the pipe. In consequence of Dr. Howitt's report, the city engineer was instructed to make a thorough examination of the pipe line. This was done and a report submitted, whereupon the following resolution was passed by the board of health:

"That the reports of the Medical Officer of Health, the City Engineer and the Sanitary Inspector respecting the condition of the new water pipe line connecting the Carter and Stone springs with the city water-works be referred to the City Council, and that, whereas it is now over sixteen months since our water supply was found to be contaminated and over six months since the new supply has been added to the old, and as the new supply has been found to be badly contaminated, and to have been left unprotected, and to have been improperly constructed during all this time, thus showing that the Water Commissioners could not have taken trouble to familiarize themselves with the line, or that they have been dangerously negligent in their duties, we are of the opinion that the City Council should take such steps as it may deem expedient to have, in the shortest possible time, the water supply of Guelph well guarded and the line repaired or altered, even if this might necessitate the reorganization of the present Water Commission, or submitting a by-law to the electors that they might vote on the abolition of the Water Commission, and furthermore be it stated

that we take this step without prejudice to any one, but having only one idea in view, that is the safety of the water supply of Guelph and interest for the welfare of its citizens, this being our duty."

QUEBEC

THE annual report of the Alexandra Hospital, Montreal, shows that during the year 1915, 903 cases were treated including 417 of diphtheria, 292 of scarlatina, 180 of measles, 6 of erysipelas, and 3 of cerebrospinal meningitis. There were 54 deaths, i.e., a rate of 5 per cent. The cost of maintenance amounted to \$2.20 a day for each patient. The nurses' home which was opened about eighteen months ago has improved conditions at the hospital, but pavilions for erysipelas and mixed infections are urgently needed.

DR. T. B. DAVIES has been appointed coroner for Hull in succession to the late Dr. H. F. Lyster.

MANITOBA

THE second annual meeting of the Dominion Women's Missionary Society of the Presbyterian Church was held in Winnipeg on June 6th and 7th. Reference was made in the presidential address to the need for more women medical missionaries and a resolution was passed that financial assistance be given to young women who are willing to enter the field of medical missions. The society maintains in this country nine hospitals, seven educational homes among the foreign communities, four educational homes in the Province of Quebec, seven boarding schools, and seven day schools among the Indians. Sixty-four missionaries are engaged in evangelistical, medical, and educational work in the foreign field.

ALBERTA

THE cottage hospital at Beverly, which was opened on May 10th, is said to be the first one in this country to be established and maintained by a municipality.

SASKATCHEWAN

THE epidemic of grippe which occurred practically all over the country during the months of January and February prepared the way for other infectious diseases such as measles and whooping cough. These have not been so prevalent in Saskatchewan as in

some other parts of the country. However, in Saskatoon during the month of April, 683 cases of infectious disease were reported, and among these were 653 cases of measles. In March, 273 cases of measles were reported amongst a total of 295 cases of infectious disease.

THE annual meeting of the Saskatchewan Medical Association will take place at Regina from July 18th to 20th, inclusive.

BRITISH COLUMBIA

DR. H. E. YOUNG, of Victoria, who for many years was provincial secretary and minister of education, has been appointed secretary of the health department and provincial health officer.

CERTAIN reflexions on the condition of the tubercular ward of the Royal Jubilee Hospital at Victoria were recently made by the Grand Jury of the Assize Court. It appears that there was some ground for the statements but that the hospital authorities are not to blame in the matter. When the law requiring hospitals in receipt of governmental grants to provide accommodation for patients suffering from tuberculosis came into force, the hospital authorities asked for a grant from the city council to meet the demands of this law; their request, however, was refused and as no funds were available for the purpose they did the best they could under the circumstances, that is they put up a number of small sheds which serve as a tubercular ward but which do not offer adequate accommodation for the number of patients. A special committee was appointed some time ago to approach the provincial government in the matter. The Premier and other members of the administration were interviewed but the application has not yet come up for consideration by the executive. At a recent meeting of the Board of Directors of the hospital, it was decided that the request for a governmental grant of \$10,000 should be repeated at once. A maternity ward has been added recently to the hospital and was formally opened on May 26th; the furnishings were supplied by the Women's Auxiliary.

DR. G. T. WILSON has been appointed medical officer of health and city bacteriologist at New Westminster in succession to Dr. A. L. McQuarrie, who has gone overseas with the 121st Battalion. Dr. R. E. Walker has been appointed coroner.

THE annual meeting of the Board of Directors of the King's Daughters' Hospital at Duncan was held May 4th. During the year ending March 31st, 1916, 136 patients were treated, the number of hospital days was 2,634 as compared with 3,059 during the previous year, and the average cost of maintenance was \$2.66 a day for each patient.

JUDGEMENT was recently obtained by two physicians of Vancouver against the Pacific Lock Joint Company. Action was brought by the physicians to recover the amount of an account rendered for professional services given to an employee of the Company who had been brought to the office of one of the doctors by the superintendent, suffering from an injury to the eye. The superintendent stated that the Company would be responsible for the fees and a specialist was called in by the doctor. The Company denied liability on the ground that the superintendent had no authority to say that they would pay and that the doctor had no right to call in a specialist.

THE recent amendment to the Hospital Act throws the onus of responsibility for hospital expenses incurred by its residents upon the municipality. In the past the municipality has been responsible only for "indigent" patients, but as it is extremely difficult to prove that a patient is indigent, the hospitals have frequently been unable to collect the fees either from the patient or from the municipality. By the new arrangement, should his bill not be paid by the patient, the municipality will pay the hospital and will then endeavour to collect the amount from the patient.

DR. G. S. GRAHAM, formerly pathologist and bacteriologist at the City Hospital, Boston, has been appointed chief of the Vancouver General Hospital Laboratories.

MEDICAL COLLEGES

McGill University

AT the conference of representatives of Canadian universities held at McGill University in May, it was recommended by the medical committee that the course in medicine should be extended from four to six years as a minimum.

THE annual convocation for conferring degrees in medicine and agriculture took place on Thursday, May 18th, when the degree of M.D., C.M., was conferred on the following successful candidates, twenty-eight in number: John Ernest Affleck, Glasgow Station, Ontario; Charles Magee Anderson, Ottawa; Sidney George Baldwin, Vancouver; Harry Alfred Barrett, Durieu P.O., British Columbia; Peter Smyth Campbell, B.A., Port Hood, Nova Scotia; Kelcey Ireland Conover, Montreal; Ernest Couture, Hull, Quebec; Harry Goldblatt, B.A., Montreal; Alton Goldbloom, B.A., Vancouver; Esau A. Greespon, Hawkesbury, Ontario; Louis Gross, Montreal; Louis John Hartman, Alexandria Bay, New York; Abraham Theodore Jacob's, Montreal; Burton Oreno Kinney, Florenceville, New Brunswick; Joseph Leavitt, B.A., Montreal; Thomas Francis McCaffery, Montreal; Herbert Bruce McEwen, New Westminster; John James MacPherson, Port Daniel West, Quebec; Charles Augustus Marlatt, Waterford, Ontario; McColl Metcalfe, Vankleek Hill, Ontario; Charles Alfred Molleur, Montreal; Robert Oliver, New Westminster; John Alfred O'Regan, St. John, New Brunswick; Harold Francis Owens, Bridgeport, Connecticut; Frank D. Learn Phelps, Westmount, Quebec; Gordon William Roberts, Ottawa; Louis Arthur Smith Stewart, Alymer East, Quebec; Willis Edmund Sullivan, Biddeford, Mobile.

The *ad eundem* degree of M.D., C.M., was conferred *in absentia* upon Mrs. Mary Adelaide Runnells Bird, M.D., a graduate of Bishop's College. Mrs. Bird is engaged at present in hospital work in England and, with the exception of Dr. Maude Abbott, curator of the McGill Pathological Museum, is the only woman thus honoured by the University of McGill.

The award of medals and prizes in the graduating class was as follows: Holmes Gold Medal for the highest aggregate in all subjects forming the medical curriculum, Louis Gross, Montreal.

Final prize for highest aggregate in fifth year subjects, Harry Goldblatt, B.A., Montreal.

Wood Gold Medal for the best examination in all the clinical branches, H. B. McEwen, New Westminster.

McGill Medical Society's Senior Prizes, 1st, H. Goldblatt, B.A., Montreal; 2nd, Alton Goldbloom, Vancouver.

University of Toronto

THE following were granted the degree of M.B. at the annual convocation which took place in May last. It has been decided by the university authorities that, during the war, no medals,

honours, or scholarships shall be awarded. Consequently, the names are in alphabetical order without regard to merit:

Gordon Wilson Armstrong, B.A.; James Everett Barry, Charles Noble Black, William Albert Blake, Arthur McAmmond Blakely, Norman Walter Bragg, Percival Beckett Brown, B.A.; George Milne Cameron, B.A.; Eric Kent Clarke, Isaac Cohen, Willis Clarence Connell, Duncan Corcoran, Miss Lillias Waugh Cringan, Percy William Mark Curry, Lowell Windass Dales, B.A.; George Albert Davis, B.A.; James Archibald Dickson, B.A.; Hammet Alonzo Dixon, Thomas Lorne Dobson, Charles Phillip Fenwick, Victor Percy Fleming, Walter Samuel Foote, Herbert Barnes Freel, Albert Earl Gillies, William Clarke Givens, Stanley Galbraith Graham, Aubrey Vernon Greaves, Alfred Clayton Greenaway, Henry Arthur Hessian, Harry Brown Hetherington, Lawrence Roland Hill, Wilfred Ernest Hodgins, Arthur Isaacson, Alan Bart Jackson, Robert Merredith Janes, William Ewart Jones, Arthur Wesley Knox, Aleck Donald Lapp, Charles Terrell Lewis, George Franklin Lewis, Arlof Robert Lindsay, Neville Hall Little, William Arthur Lowe, Hugh Bethune Maitland, Archie McCallum, Arthur Jeffers MacCallum, William Porteous McCowan, B.A.; John Clark McCullough, Alexander Edward MacDonald, Ashley Roy MacDonald, John Laing McDonald, Charles MacKay, William John McLean, Donald Stirling MacLennan, B.A.; Virgil Paul MacMahon, John Archibald MacMurchy, Allen Young McNair, Ewart Earl McPherson, Russell Galbraith MacRobert, Arthur Herbert Naylor, Arthur Caven Norwich, Miss Olive Gair Patterson, M.A.; Russell Beattie Robson, Wilfrid Burke Rutherford, Percy Albert Sarjeant, Charles Isaac Scott, Garner Scullard, James Harold Sharpe, Edward Earl Shouldice, Thomas Alexander Sinclair, M.A.; Frederick Spearing, B.A.; Austin Laverne Speers, James Arthur Stanley, George Herbert Stobie, Bertrand Carlisle Switzer, Roy James Snider, Garnet Edward Tanner, Frederick Fitzgerald Tisdall, Charles Herbert Warriner, B.A.; Percival Algernon Williams, Charles James McNeil Willoughby, Frederick B. Gladstone Wilson, Malcolm James Wilson, B.A.; Miss Agnes Merle Young, Harvey Gordon Young.

AN interesting feature of the Convocation was the conference *in absentia* of the degree of LL.D. upon Lieutenant-Colonel George G. Nasmith, C.M.G., in recognition of his distinguished services in France and Flanders during the present war. Lieutenant-Colonel Nasmith, at the beginning of the war, was appointed analyst

and advisory officer on sanitation for the Canadian forces. He accompanied the first Canadian contingent to the front and there soon distinguished himself by his splendid work in connexion with sanitation and the water supply. Later he discovered a means of counteracting the effects of the chlorine gas employed by the enemy. His services have been recognized already by His Majesty who, some months ago, appointed him a Companion of the Order of St. Michael and St. George.

Queen's University

DR. S. M. ASSELSTINE has been appointed to the Chair of Pharmacology and Therapeutics in the University. Dr. Asselstine has been lecturer in these subjects for the past two years.

Queen's Military Hospital (No. 7 Canadian General) is now stationed at Le Tréport, France.

Western University

At the recent convocation the honorary degree of LL.D. was conferred by the University upon Drs. H. A. MacCallum, Walter H. Moorhouse, and F. R. Eccles, of London, Ontario, and upon Dr. Leonard G. Rowntree, professor of medicine in the University of Minnesota.

THE Western University Military Hospital (No. 10 Stationary Hospital, C.E.F.) is now up to full strength. Its officers, whose names are given on another page of this issue, are all graduates of Western University, and among the rank and file are also many graduates of the University—business and professional men who have given up everything to go to the front. Captain Brock, the quartermaster, is well known in the athletic world and has been lecturer in English and History at the University for some time. The Commandant, Lieutenant-Colonel Edwin Seaborn, M.D., is associate professor of clinical surgery and lecturer in Surgery at the University.

THE following is the list of successful candidates who received the degree in medicine at the close of the 1915-16 session: Roy John Farmer, John Edgar Hawkins, Arthur John Ireland, Wesley Nesbitt McCormick, Donald Cecil McFarlane, Wilbery Orland Mitton, Edward Emanuel Phoenix, Harry Overton Pope, George Wellington Renton, James Gordon Ross, Harold Algernon Simpkins,

Daniel Logan Stewart, Robert Hobbs Taylor, Wilfred White, Harvey John Wildfang, Donald Roy Young.

ARMY MEDICAL SERVICES

THE following honours were awarded by His Majesty the King on the occasion of his birthday to members of the Canadian Army Medical Corps and Canadians serving in the Royal Army Medical Corps.

C.M.G. Lieutenant-Colonel J. T. Fotheringham, Commanding Officer of No. 4 Canadian General Hospital (Toronto University).

Military Cross. Captain G. E. Kidd, C.A.M.C. Temporary Lieutenants J. S. McCallum, R.A.M.C., and C. T. Galbraith, R.A.M.C. Temporary Lieutenant William John Knight, R.A.M.C., of Guelph, Ontario, attached to the 73rd Field Ambulance, B.E.F., "for conspicuous gallantry and devotion to duty when in charge of an advanced dressing station under heavy shell fire. He continued to attend the wounded with great coolness."

Royal Red Cross Decoration. First Class—Matrons M. O. Boulter (Assistant Matron-in-Chief), E. M. Charleson, A. C. Strong, B. J. Willoughby, and E. M. Wilson. Second Class—Nursing Sister S. M. Hoerner.

Promotion. To be Brevet-Colonel: Major (temporary Brigadier-General) A. C. Geddes, M.D., professor of anatomy, McGill University.

THE following members of the Canadian Army Medical Corps were mentioned for gallant and distinguished conduct in the field in the recent despatch from Sir Douglas Haig, Commander-in-chief of the British forces in France and Belgium: Brigadier-General Rennie, Lieutenant-Colonels Foster, Fotheringham, and Campbell, Majors Amyot, Rankin, and Snell; Captains Jeffs, Jenkins, and Hale; Sergeant-Majors Walsh, Keith, Buswell, Clarke, Jenner, and Nott; Quartermaster-Sergeant Rotsey; Acting-Sergeant Campbell; and Matron Strong, of the Nursing Service.

DR. N. M. KEITH, of Montreal, has joined the Harvard Medical Unit for service with the British forces.

HON. DR. BELAND, M.P., who was a prisoner in Germany for some months, has been released and is now in Holland.

LIEUTENANT-COLONEL J. R. SPIER, C.A.M.C., of Montreal, has been appointed chief of the medical section of No. 2 Canadian General Hospital, France. Lieutenant-Colonel Spier went to the front as medical officer of the 23rd Battalion. He was attached for some time to the staff of the Duchess of Connaught's Canadian Red Cross Hospital at Cliveden.

THE Military Cross has been awarded to Captain John Arthur Cullum, C.A.M.C., regimental medical officer of the 28th Battalion. Captain Cullum has already been mentioned in despatches on more than one occasion for conspicuous bravery on the field of action.

THE following is the honorary staff of the Daughters of the Empire Canadian Red Cross Hospital for Officers: physicians, Colonel Sir William Osler and Dr. J. Campbell McClure, of London; surgeons, Sir Alfred Pearce Gould, and Lieutenant-Colonel Donald Armour; laryngologist, Major Badgerow; dental surgeon, Captain Cameron Stewart; skin specialist, Dr. E. J. D. Mitchell; ophthalmic specialist, J. B. Lawford, Esq. Captain Creighton, C.A.M.C., is the resident medical officer.

THE following is the list of officers of No. 4 Casualty Clearing Hospital which has been recruited in Winnipeg. Lieutenant-Colonel S. W. Prowse, commanding officer; Majors F. T. Cadham and W. W. Musgrove; Captains D. F. McIntyre, James Pullar, J. O. Todd, R. M. B. Mitchell, adjutant, and H. F. Harman, quartermaster; Lieutenant R. G. Young.

MAJOR E. O. STEEVES, of Moncton, New Brunswick, has been given command of the military hospital at Aldershot Camp, Nova Scotia. Dr. Steeves was formerly medical officer of the 145th Battalion.

LIEUTENANT-COLONEL R. M. SIMPSON, of Winnipeg, has been appointed assistant director of medical supplies on the headquarters' staff at Camp Hughes.

LIEUTENANT-COLONEL H. A. CHISHOLM, D.S.O., is now A.D.M.S. of the Fifth Canadian Division in England, with Captain J. S. Jenkins, of Charlottetown, as deputy.

THE following is the list of officers of No. 10 Stationary Hospital, the gift of Western University: Lieutenant-Colonel Edwin Seaborn, Officer Commanding; Majors C. E. Brown, and J. C. Wilson; Captains J. S. Hudson, A. Turner, F. W. Luney, E. H. Young, J. Moriarty, C. L. Douglas, E. Bice, R. H. Henderson, and G. M. Brock, quartermaster; Lieutenant J. A. Dickie, dispenser. The personnel of the unit includes twenty-five non-commissioned officers, sixty ward privates, sixteen batmen, fourteen general men, one matron, ten nursing sisters, and sixteen staff nurses.

MAJOR L. E. W. IRVING, D.S.O., of Toronto, is in command of the Canadian division at the Woodcote Park Convalescent Hospital, near Epsom. This is the largest hospital of its kind in the United Kingdom and now has accommodation for about four thousand patients. The Canadian division consists of two sections—the Woodcote Park section with five hundred beds, which is in charge of Captain D. A. Murray, of Toronto; and the Farm Camp section with one thousand beds, in charge of Captain Goulden, of Winnipeg. Captain G. P. Howlett, of Ottawa, is the medical officer of the division.

MAJOR GEORGE T. McKEOUGH, C.A.M.C., of Toronto, has been appointed president of the Canadian Medical Board at Bramshott Camp, England.

CAPTAIN J. H. CONKLIN, C.A.M.C., of Winnipeg, has joined the First Field Ambulance Corps which is now in training at Camp Hughes.

MAJOR W. E. NELSON, of Montreal, has been transferred to No. 2 General Hospital, and Captain W. O. Claxton to No. 7 General Hospital, C.E.F.

CAPTAIN C. J. McMILLAN, M.D., of Charlottetown, has been appointed second in command of the McGill Overseas Unit which is in training at Halifax.

CAPTAIN G. G. CORBET, C.A.M.C., of St. John, New Brunswick, is registrar at the Canadian Convalescent Hospital at Bearwood Park, Wokingham, England.

THE following have been appointed medical officers of overseas

battalions: Captain Baldur H. Olson, assistant superintendent of Ninette Sanatorium, of the 223rd Battalion; Captain Parker, of Hamilton, of the 86th Machine Gun Battalion; Captain H. C. P. Hazlewood, of Toronto, of the 204th Battalion; Major W. A. McIntosh, of Simcoe, Ontario, of the 133rd Battalion; Captain T. W. Walker, of Saskatoon, of the 196th Battalion; CAPTAIN M. A. OULTON, of Shediac, New Brunswick, of the 145th Battalion; Captain Arthur M. Blakely, of Chatham, Ontario, of the 186th Battalion; Captain Elmer J. Dickenson, of Winnipeg, of the 119th Battalion.

LIEUTENANT-COLONEL HARRY GORDON, C.A.M.C., of Winnipeg, is in command of the 12th Field Ambulance, which was recruited in Winnipeg. Lieutenant-Colonel Gordon was formerly medical officer of the 61st Battalion.

THE following lieutenants in the C.A.M.C. have been gazetted lieutenants in the R.A.M.C.: L. E. Bolster, W. G. Shaw, W. A. Cardwell.

PROMOTIONS in the C.A.M.C. To be Lieutenant-Colonel: Majors F. W. Wilson, H. A. Chisholm, D.S.O., E. G. Davis, E. J. Williams, J. McCombe and D. MacGillivray. To be Captain: Lieutenants S. G. Baldwin, J. E. Affleck, and H. B. MacEwen.

THE following officers of the C.A.M.C. have been appointed temporary lieutenants in the R.A.M.C. Captain H. B. Maxwell, Lieutenants C. E. A. Trow, M.B., G. Stewart, M.B., L. W. B. Braine, M.D., T. W. F. MacKnight, M.D., E. C. A. Reynolds, M.D., R. A. MacKay, M.B., J. E. O'Donnell, M.D., D. L. MacKenna, M.B., H. G. Joyce, and G. F. Nelson, M.D.

CASUALTIES

Lost on H.M.S. Hampshire

CAPTAIN HAROLD CHAPLIN, of St. John's, Newfoundland. Dr. Chaplin was in the Newfoundland Naval Reserve and was surgeon on the *Hampshire* when that vessel met with disaster. His brother died of wounds last year.

Missing

CAPTAIN W. R. W. HAIGHT, C.A.M.C.

CAPTAIN FRANK STEWART PARK, C.A.M.C., of Toronto.

Seriously Ill

NURSING SISTER GERTRUDE LILIAN SPANNER, of Toronto.

Wounded

CAPTAIN JOHN AYLMER REID, C.A.M.C., of Pinkerton, Ontario.

CAPTAIN W. L. SHANNON, C.A.M.C., of Vancouver, medical officer of 10th Cavalry Battalion.

CAPTAIN J. J. JAMIESON, C.A.M.C.

LIEUTENANT E. V. SULLIVAN, R.A.M.C., of St. Stephen, New Brunswick.

Suffering from Shell Shock

CAPTAIN F. PERRAS, C.A.M.C., of Montreal, medical officer of 22nd Battalion.

Canadian Literature**ORIGINAL CONTRIBUTIONS***The Public Health Journal*, May, 1916:

Social service and hospital efficiency	.	H. R. Y. Reid.
Feeble-minded and the public schools	.	C. G. Fraser.
The physician in industry	M. W. Alexander
Prevention of venereal disease	.	H. B. Weston.

L'Union Médicale du Canada, May, 1916:

Responsabilité médicale	W. Derome.
Comment guerir les bossus	R. Falardeau.

The Canadian Journal of Medicine and Surgery, May, 1916:

Open operation for fractures . . . W. E. Gallie.

La Clinique, May, 1916:

La réaction de Wassermann . . . H. Grignon.

La cure d'inanition du diabète sucré . . . G. Juilly.

Un cas de fièvre typhoïde traité par l'électrolyse . . . O. E. Desjardins.

The Canadian Journal of Medicine and Surgery, June, 1916:

Danger signals in anæsthesia. . . S. Johnston.

The Canadian Practitioner and Review, June, 1916:

Pediculosis pubis . . . D. W. Montgomery.

The determination of sex . . . J. S. Freeborn.

Dominion Medical Monthly, June, 1916:

The periodic medical examination . . . G. Elliott.

The Canada Lancet, June, 1916:

The history of medicine in Britain . . . J. Ferguson.

Retrospect

SURGERY

THE OPERATIVE TREATMENT OF PYLORIC OBSTRUCTION IN INFANTS.

By William A. Downes, New York. *Surgery, Gyn. and Obstet.*, March, 1916.

(A review of sixty-six personal cases)

ETIOLOGY

1. The presence at birth of a true malformation.
 2. Edema resulting from the efforts to force food through a narrow and elongated pyloric lumen.
- Downes states that edema was present in all of his sixty-six cases.

SYMPTOMS

Of the clinical symptoms Downes lays most stress upon the presence of tumour. In his series tumour was noted before operation in all. Where necessary for diagnosis, the administration of a light anæsthetic and the passing of a tube into the stomach to remove gas is advised as a routine procedure. Downes considers the presence of tumour to the right and above the umbilicus as pathognomonic of the condition.

OPERATIVE TREATMENT

Of the two methods employed (a) posterior gastro-enterostomy and (b) partial pyloroplasty (Rammstedt operation), the latter has yielded the best results. The technique of the operation is as follows. An incision is made through the right rectus immediately over the tumour. The tumour should then be brought into the wound and held firmly between the thumb and index finger of the left hand. An incision 2-3 cm. in length is made over the mass from the duodenum to the stomach, and carried through the serosa and hypertrophied sphincter. As the incision is deepened, the edges of the wound beginning at the stomach end should be gradually forced apart. The danger of opening the bowel where the sudden change from the thickened and cedematous pylorus to the normal duodenum occurs should be avoided. When the muscle is sufficiently divided, and the edges separated, the mucosa protrudes freely into the wound. Such slight hæmorrhage as may occur is easily controlled by the application of hot pads. No attempt should be made to cover the incision in the pylorus. The operation should take from ten to twenty minutes.

RESULTS

In 31 gastro-enterostomies there were 11 deaths; mortality 35 per cent. In 35 partial pyloroplasties, 8 deaths; mortality 23 per cent.

CONCLUSIONS

Downes concludes that partial pyloroplasty has the following advantages over gastro-enterostomy:

1. The operation requires less than half the time.
2. The reaction is more prompt.
3. Feeding is begun earlier and can be pushed more rapidly.
4. Post-operative vomiting is less.

5. Late complications, such as diarrhoea and unexplained vomiting, do not occur.

6. The operation is simple and requires less surgical skill.

7. Obstruction is permanently removed and normal continuity of the alimentary tract is preserved.

The objections raised against the method are: (1) that it leaves an uncovered wound; (2) that the abdominal cavity is protected from contamination only by a thin layer of mucous membrane; and (3) that, as the scar contracts, the obstruction will reform. Downes believes these criticisms to be largely theoretical—as shown by the excellent results obtained by the method. The real danger of the method is the opening of the mucous membrane, but this can be avoided with care.

A gastro-enterostomy should be added, if there is reason to suspect that the lumen of the pylorus is not patent after division of the circular muscle.

Until something better is proposed, Downes thinks the Rammstedt operation the operation of choice for pyloric obstruction in infants.

E. M. VON EBERTS

RADIOLOGY

IN the March number of the *Archives of Radiology and Electrotherapy*, pages 332-335, an interesting account of the organization of the x-ray department of a General Hospital in France is given by Captain A. H. Pirie, C.A.M.C., who is in charge of this department in No. 3 Canadian General Hospital (McGill).

The first step taken in connexion with the x-ray department was a visit to New York where arrangements were made as to the type of apparatus. Two apparatuses were ordered and were transferred to Ottawa, where they were unpacked, tested, and repacked. They arrived in France in good condition. Until the hospital was opened, the staff of the department was occupied by preliminary preparations. The quarters allotted were: x-ray room; developing room; engine room, and tent—a fluoroscopic room would have been an advantage.

The x-ray room was made light tight with blinds specially built for the purpose, so that the room could be quickly lightened

and darkened. An *x*-ray table was built from a standard table as used in the wards, with an *x*-ray proof tube box under the table. The wires carrying the current were placed in an underground tunnel, and led through the floor to the *x*-ray tube under the table, thus avoiding any chance of shock to the operator or spectators. This arrangement proved satisfactory in every way. An upright fluoroscope was also built and proved equally satisfactory. The tent was used for storing packing cases, of which there were about twenty; it was also used for drying the plates and demonstrating them in the Wheatstone stereoscope. The storing of the packing cases proved very useful as the hospital has since been moved to other quarters. Two *x*-ray machines of the type known as "Interrupterless transformers" were supplied to the department. Each machine consisted of a 10 h.p. petrol engine of the "Marine" type, a 2 k.w. generator, and a 2 k.w. transformer, supplied by Messrs. Waite and Bartlett, of New York. The two machines were similar, with parts interchangeable; so that if both broke down, one could be repaired by borrowing from the other machine. Consequently one apparatus has always been in working order. Each machine can be taken apart and packed in four boxes for transport, and four men can carry the heaviest box (480 pounds). Of thirty-two tubes despatched, nine arrived broken, so that there were twenty-three with which to start work. All the tubes were seven inches in diameter, with solid tungsten targets. All accessories, such as plates, paper, lamps, aprons, gloves, chemicals, etc., arrived undamaged and nothing was lacking in equipment.

The staff consisted of two captains and three orderlies. An extra orderly was required to carry patients when the department was particularly busy after the arrival of a convoy of wounded.

The department was opened on August 8th, 1915, when fourteen radiographs were made. On the third day eighty-three radiographs were made, as well as many fluoroscope examinations and localizations of foreign bodies. On this occasion one machine was at work from 8.30 a.m. to 7 p.m., and broke down. The armature burned out owing to too constant and prolonged use. No precautions had been taken to save it, the requirements of the patients alone having been considered. The other apparatus was subsequently in daily use and precautions were taken that it was never overtaxed. It is still in perfect order. A new armature was ordered and despatched from New York, August 21st, by Messrs. Waite and Bartlett by steamship; it arrived three months later. The burnt armature was sent to London to be repaired.

When an examination of a patient was required, the following requisition form was filled out by the medical officer in charge of the case, and sent to the department:

CANADIAN GENERAL HOSPITAL—X-RAY DEPARTMENT

Surname.....
 First Name.....
 Regimental No.....
 Unit.....
 Brigade or Division.....
 Nationality.....
 Injury.....
 Wounded at.....
 Ward.....
 Provisional Diagnosis.....
 Information Desired.....
 Referred from.....
 Patient can walk.....
 Patient requires a stretcher.....

This form was taken to the ward by an orderly from the department, who, with the help of the ward-orderly, returned with the patient. The ward-orderly also assisted with the return of the patient to the ward. Of course, if the patient could walk the ward-orderly was not required. All requisitions were attended to the same day as required, but on three occasions, owing to pressure of work, it was necessary to leave the less urgent cases over until the following day. This delay was due to the lack of the second apparatus, the length of time required to move a seriously wounded, helpless patient, the heavy rain, and the darkness which rendered the transport of patients both difficult and dangerous after 5.30 p.m. At no time did any patient suffer from want of x-ray attention.

By the use of paper, instead of plates, in preparing radiographs, it was possible, when required, to let the surgeon see an x-ray photograph of his case one minute after the photograph was taken. As a general rule, radiographs were ready for inspection half an hour after the photograph was taken, but it was found more practical to show the radiographs to the surgeons during the evening as time was lost if the work was stopped during the day in order to consult with the surgeons. From August 8th to November

5th, 1915, fifteen hundred and forty x-ray photographs and many fluoroscopic examinations were made. X-ray treatments were given for sycosis, rodent ulcer, and exophthalmic goitre. No x-ray burn or other untoward effect was caused to patients or staff. Stomach examinations by barium meals were carried out when required. The nature of the findings was approximately in the following proportions: foreign bodies, 60 per cent.; negative diagnosis, 30 per cent.; fractures, 5 per cent.; diseases, 5 per cent.

The methods of localization employed were: a modified Mackenzie Davidson method; stereoscopic; anterior, posterior and lateral views, with metal ring on wound of entrance; fluoroscopic localization; placing a needle with its point in contact with the foreign body, using the fluorescent screen for the purpose; "Snook's" modification of Sweet's method for foreign bodies in the eye. The first-mentioned method proved very satisfactory and was used almost exclusively, except for foreign bodies in the eye.

In keeping records, the method adopted was that which had been used in civil practice for many years, namely, a numerical book, a card index of names of patients, a card index of diseases. The fortnightly supply of plates, paper, chemicals, etc., was received regularly and the department was never obliged to cease work through want of supplies.

The author concludes: "Coming as we did to unknown conditions, it has been a source of great satisfaction to us that every case has been as well treated in this department as it would have been in a large civil hospital. The quality of the radiographs has been as good as that seen in civil practice. The apparatus has been in good order every day so that no day passed when x-rays could not be had."

Medical Societies

CANADIAN MEDICAL ASSOCIATION

FINANCIAL STATEMENT

THE financial statements for the years 1914 and 1915 are here presented.

As compared with 1913 it will be noted that there is a decrease in receipts of about \$600.00. This was largely due to the decrease in collections at the St. John meeting. The overdraft of

\$707.73 at the end of 1914 is partly accounted for by an overdraft of \$202.97 from 1913. During the year 135 new subscriptions were received, half of this number at the annual meeting. There were 274 discontinuances, 42 on account of nonpayment of fees, 26 left on active service, and 6 due to death. The net decrease in membership for the year was 139.

CASH RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDING
DECEMBER 31st, 1914

Receipts

Total annual fees.....	\$6,513 66	
Reprints.....	343 11	
Total receipts.....		\$6,856 77
Balance, bank overdraft December 31st, 1913.....		707 73
		<hr/> \$7,564 50

Disbursements

Bank overdraft, January 1st, 1914.....	\$203 97	
JOURNAL account.....	2,939 45	
Reprints.....	346 22	
Editorial allowance paid.....	1,125 00	
Montreal Medical Journal Co., payment to stock- holders (\$5,000.00 at 6 per cent).....	300 00	
Refunds paid affiliated provincial associations:		
Ontario 1914.....	\$248 00	
British Columbia 1913.....	35 50	
Alberta ".....	51 50	
Saskatchewan ".....	36 50	
Manitoba ".....	59 50	
New Brunswick ".....	26 00	
Nova Scotia ".....	38 50	
		<hr/> \$495 50
General expenses:		
Salary, secretary-treasurer.....	\$1,083 33	
Salary, stenographer.....	540 00	
Stationery.....	57 40	
Postage and sundries.....	105 00	
Audit fee.....	50 00	
Travelling expenses.....	100 19	
St. John meeting.....	197 49	
Sundries.....	20 95	
		<hr/> \$2,154 36
		<hr/> \$7,564 50

Comparing the 1915 statement with that of 1914 it will be seen that the ordinary income of the Association shows a decrease of a little over \$725.00. This, together with the bank overdraft of \$707.73 would make a total deficit for the year of roughly \$1,433.00. This, however, has been overcome and a surplus for the year of

\$32.82 is shown. This is accounted for by the fact that no salary was paid to the Acting Secretary-Treasurer, and certain sums due as dividends to some of the members of the Association were generously donated by these members.

10 new subscriptions only were received during 1915, while for various reasons, the discontinuances amounted to 199. The net decrease in membership was 189.

CASH RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDING
DECEMBER 31st, 1915

<i>Receipts</i>			
Total annual fees.....		\$5,788 24	
Reprints.....		370 20	
Total receipts.....			\$6,158 44
<i>Disbursements</i>			
Bank overdraft, January 1st, 1915.....		\$707 73	
JOURNAL account.....		2,751 04	
Reprints.....		444 35	
Clippings.....		40 00	
Editorial allowance paid.....		601 65	
Montreal Medical Journal Co., payments made this year.....		144 00	
Refunds paid affiliated provincial associations:			
Ontario 1915.....	\$210 00		
British Columbia 1914.....	38 00		
Alberta ".....	57 00		
Saskatchewan ".....	30 00		
Manitoba ".....	61 50		
New Brunswick ".....	68 50		
Nova Scotia ".....	52 00		
			\$517 00
General expenses:			
Salary, secretary-treasurer.....	nil		
Salary, stenographer.....	\$645 00		
Stationery.....	67 00		
Postage and sundries.....	140 00		
Audit fee.....	20 00		
Sundries.....	47 85		
			\$919 85
Balance in bank.....		32 82	
			\$6,158 44

ONTARIO MEDICAL ASSOCIATION

THE thirty-sixth annual meeting of the Ontario Medical Association was held in Toronto May 31st, June 1st, and 2nd.

Five addresses were delivered on the first day before the General Session. Professor A. D. Blackader, of Montreal, spoke

on "Drugs and medicinal agents, considered from the professional, economic, and national standpoints." It was stated that the formulæ should be known of all preparations prescribed and that the use of all patented names upon prescriptions should be avoided. The true chemical name or the name used in the British Pharmacopœia should be the only one employed. Since the war had started many new Canadian drugs had been manufactured and these in nearly every case had been eminently satisfactory. After the war was over home made or British made drugs should be favoured. The full text of this paper will be found elsewhere in this issue. In discussing this paper Dr. Rudolf, of Toronto, stated that it had been the custom of the German government to give a bonus to their new drug manufacturers until they had driven other manufacturers off the market by underselling them. To meet this he suggested that after the war all German drugs should be heavily taxed. A notification from the Dominion government regarding an impending revision of the bill for the sale of patent medicines was then read, and a committee was appointed to make representations to the government in respect to this.

Dr. J. F. Percy, of Galesburg, Illinois, then addressed the meeting on the "Problem of heat as a method of treatment in cases of inoperable uterine carcinoma." Cases were quoted in which much improvement had resulted from the application of varying degrees of heat by means of special apparatus which was described in detail.

"Tonsillectomy with its general results" was the subject of a paper by Dr. Justus Matthews of the Mayo Clinic of Rochester, Minnesota. The type of operation generally employed and the results obtained were described. It was the custom in this clinic to perform the operation under local anæsthesia. In a series of several thousand cases practically no bleeding had occurred as a complication.

The presidential address was then delivered by Dr. H. B. Anderson of Toronto (see page 481 of the June issue of this JOURNAL). In his opening remarks Dr. Anderson stated that the meeting was taking place at a time pregnant with the most momentous issues since the dawn of the Christian era, under the shadow of the greatest calamity in history, with our Empire and her allies engaged in a death struggle to uphold the cause of freedom and justice against a military despotism, which, in the guise of Kultur, is seeking world power with the ethics and by the methods of barbarism. The official historian in describing the battle of Ypres was quoted

as saying that "the members of the Canadian Army Medical Corps rivalled in coolness, endurance and valour the men of the battalions who were their comrades". Burdens had fallen upon the members of the medical profession left behind, but these had been cheerfully undertaken not only as a duty but as a privilege. The Association had put forth special efforts to help to solve the problem of the injured soldier and had already received notice that the government of Canada was indebted to it for the splendid spirit which it had shown. In regard to drugs we must not, hereafter, recognize a dual system of medical ethics under which state-controlled professors in German clinics may advertise in text-books and trade literature, patented or trade-marked preparations, in a manner contrary to our code, nor should we allow ourselves to second their efforts by prescribing those products as if there was some peculiar virtue attached. The medical profession should learn to place its dependence on the carefully appraised preparations in our national pharmacopœias, which should contain all really useful remedies, rather than in the commercially-biassed catalogues of drug houses, with their too frequent irrational polypharmacy. In regard to the value of medical men in the war, Dr. Anderson said that there had never been such a demonstration of the national importance of a thoroughly trained medical profession. The service which scientific medicine had rendered in protecting our soldiers against typhoid fever, dysentery, cholera, and other scourges of armies, had saved tens of thousands of lives and trebled military efficiency. In conclusion Dr. Anderson thanked his fellow officers of the Association for their loyal support.

The address in medicine was given by Dr. Elliott P. Joslin, of Boston, who chose as his subject, "The treatment of diabetes mellitus." If cases were seen early they could be prevented from running an acute course, and if the urine was kept free from sugar there was seldom an opportunity for coma to develop. The preliminary treatment was to exclude fat, which is the source of the poisonous fatty acids, from the diet. The carbohydrates and proteids were then cut down as well, but it was dangerous to cut the proteids down below a certain percentage. After a certain amount of starvation the diet could be slowly raised again without necessarily causing a reappearance or an increase in the amount of sugar in the urine.

On the morning of the second day meetings were held in the sections of medicine, surgery, and gynæcology. In the medical section Dr. Gordon Bates, of Toronto, gave a paper on the "New

arsenical preparations in syphilis," Dr. George E. Smith, of Toronto, on the "Treatment of syphilis in children," and Dr. C. D. Parfitt, of Gravenhurst, on the "Indications for artificial pneumothorax." "A functional map of the floor of the fourth Ventricle" was the subject of a paper which showed much investigation by Prof. F. R. Miller of the Western University of London, Ontario. By employing the method of unipolar stimulation a number of functions had been localized in the floor of the fourth ventricle. Stimulation at the inferior fovea causes deglutition and reflex secretion from the homolateral parotid and submaxillary glands. These effects are probably produced by stimulation of afferent fibres continued in the fasciculus solitarius. At two points, situated at the level of the striæ medullares, submaxillary and parotid secretion is evoked. It seems probable that these results depend upon stimulation of efferent fibres proceeding from the respective salivary nuclei. From the dorsal vagus nucleus cardiac inhibition and peristalsis of the stomach and small intestine may be elicited. Dr. Julian Loudon, of Toronto, in discussing Dr. Miller's paper said that the deduction of the arching upwards towards the middle line of fibres from the deeper salivary nuclei in a manner similar to the arching of the seventh nerve upwards and around the nucleus of the sixth nerve, was an interesting fact which would likely be confirmed by histological investigation.

Captain G. D. Porter spoke on "Anti-typhoid inoculation in soldiers" and mentioned that good results were being obtained with less systemic reaction by the use of paratyphoid vaccine.

In the surgical section Dr. Olmstead, of Hamilton, gave an address on "Gall stones" and mentioned the necessity of thoroughly examining the surrounding organs in the course of an operation. The question of the removal of the gall bladder in these cases was discussed. Dr. W. E. Gallie, of Toronto, spoke on "Pyloric stenosis in infants" and said that if untreated the mortality was 100 per cent. If recognized and treated by pyloroplasty the mortality was about 25 per cent. The causation of the disease operated before birth, but was unknown. "Inflammatory growths of the bowel, simulating cancer" was the title of a paper by Dr. Herbert Bruce, of Toronto. Many cases, which had been diagnosed as cancer until the mass was removed and reported upon by the pathologist, were quoted. The following papers were also on the programme: "Significance of pain in the diagnosis of abdominal and pelvic disease" by Dr. S. M. Hay, of Toronto; "Appendicitis," by Dr. M. O. Klotz, of Ottawa; "Duodenal ulcer,"

by Dr. A. H. Perfect, of Toronto, and "Treatment of cancer by fulguration," by Dr. J. E. Hett, of Berlin, Ontario.

In the gynæcological and obstetrical section Dr. J. S. Kinnear, of Toronto, gave a paper on "Morphine and hyoscyne in obstetrics" and advised the use of these drugs in prolonged labours, but not if delivery is expected within three hours as apnoea might result. Dr. Alan Brown, of Toronto, spoke on "Blood transfusion in hæmorrhage of the newly born" and described the technique of withdrawing blood from the donor into a syringe lined with paraffine. In his experience one case had died in a series of eight. Dr. Unger, of New York, then exhibited and described his apparatus for blood transfusion. In the course of his remarks he insisted that tests for hæmolysis should be made except in cases of emergency. The "Treatment of dysmenorrhœa" was presented by Professor Weir, of Cleveland, who insisted on the necessity of an accurate diagnosis of the underlying cause. In the "Treatment of eclampsia," Dr. J. S. Wardlaw, of Galt, advocated the use of morphine, elimination, and the early production of abortion.

In the afternoon of the second day before the general session Professor deWit Lewis, of Chicago, delivered a paper with lantern slides on "Cystic mastitis". He spoke of the tendency to a central location of the disease and discussed the diagnosis from carcinoma. The "Treatment of pneumonia" was the subject of a paper by Professor Solomon Solis Cohen, of Philadelphia. In the preface to his remarks Professor Cohen said that the heart of all the good people in the United States were with Great Britain and her Allies in her fight for freedom. He stated that Great Britain's war was a righteous struggle against aggression, and in our treatment of pneumonia we should endeavour to find the most effectual means of routing the Goths and Huns of the microscopic world. The best big gun which he had yet discovered was quinine, although he did not place his faith on this drug alone; but also employed inhalations, fresh air, good-nursing, etc. By the use of quinine in large doses over a period of twelve years, his mortality in all cases had been 16 per cent. He considered that quinine acted as a chemical antitoxin and neutralized the poisons of pneumonia. By its use one could often keep the temperature down and substitute a lysis for a crisis. Dr. Cohen's method of administration was usually the intramuscular and the doses given were larger than could be tolerated by normal persons. Dr. J. L. Davidson, of Toronto, in discussing this paper said that he had advocated and used quinine in large doses for many years in the treatment of pneumonia.

At the business session Dr. A. Dalton Smith, of Mitchell, was elected president for the ensuing year, and Toronto was decided upon as the place of meeting. The other officers elected were: vice-president, Dr. C. L. Starr, Toronto; treasurer, Dr. J. H. Elliott, Toronto; secretary, Dr. F. A. Clarkson, Toronto. Representatives to the Canadian Medical Association, Dr. H. B. Anderson, Dr. H. J. Hamilton, of Toronto, and Dr. G. S. Cameron, of Peterborough. Executive Committee, Dr. D. J. Wishart, of Toronto, and Dr. F. C. Neal, of Peterborough. At the conclusion of this session the members of the Association and ladies were entertained at Dentonia Park Farm, East Toronto, by Mrs. W. E. H. Massey who was assisted in receiving the guests by Dr. and Mrs. H. B. Anderson.

In the evening of the second day before the general session Drs. John A. Wyeth, John A. Bodine and C. H. Chetwood showed moving pictures of various operations to illustrate the surgical technique used in the New York Polyclinic Hospital. These pictures illustrated very clearly the various stages in actual operations, *e.g.* the bloodless operation for amputation at the hip joint, the operation for inguinal hernia under local anæsthesia, and the removal of a kidney for multiple calculi. "Mouth infections and some of the mechanisms by which they produce localized and systemic diseases," was the subject of a very interesting and instructive address by Dr. W. A. Price, of Cleveland.

On the morning of the third day there were further papers given before the medical, surgical, and gynæcological sections. Before the medical section Dr. L. G. Pearce, of Brantford, spoke on "Protozoan infections," such as malaria, syphilis, and sleeping sickness. Dr. Charles McKay, of Seaforth, spoke on "Pernicious anæmia" and quoted several cases. In discussing this paper Dr. G. W. Ross, of Toronto, said that he had found a streptococcus in the blood of the last four out of five cases examined, and believed the organism to be a constant invader of the blood in pernicious anæmia. The only cases under his care which had done well were those in which a transfusion of blood from another individual had been performed. "Duodenal feeding" was described by Dr. E. E. Cleaver, of New York, and the type of tube used was exhibited. Other papers given were "Radium as an accessory in the treatment of exophthalmic goitre" by W. H. B. Aikens, of Toronto; "Arterial hypertension" by Dr. H. A. Boyce, of Kingston, and "Prophylactic therapeutic inoculation with respect to common colds" by Dr. G. W. Ross and H. K. Detweiler, of Toronto.

In the surgical section the following papers were presented: "Fractures, including compound," by Drs. J. M. Rogers, E. Seaborn, and T. H. Middleboro; "The relative merits of the steel plate and bone graft in the treatment of recent fractures," by Dr. E. R. Secord, of Brantford; "The transthoracic operation for chronic empyema and bronchiectasis," by F. N. G. Starr, of Toronto; "Pulmonary abscess, following abdominal operation," by Angus McLean, of Detroit; "Renal calculi," by Dr. W. W. Jones, of Toronto; "Conservative surgery in injuries of the hand" by Dr. N. A. Powell, of Toronto; and "Considerations in the diagnosis and surgical treatment of gastric and duodenal ulcer" by Dr. J. K. McGregor, of Hamilton.

In the section of gynæcology and obstetrics, Dr. A. C. Hendrick, of Toronto, gave a paper on "Diagnosis and choice of operations in retro-displacements," and Dr. J. L. Bradley, of Creemore, spoke on the "Pathology and treatment of uterine hæmorrhage." "The female pelvic floor, and the part it plays in obstetrics and gynæcology," was the subject of an address, illustrated by moving pictures, by Professor T. H. Morgan, of New York. The pictures showed an operation for perineorrhaphy by Dr. Morgan and demonstrated the most highly perfected technique employed in this operation. Dr. Weir, of Cleveland, and Dr. F. A. Cleland, of Toronto, took part in the discussion of this operation, and complimented Dr. Morgan on being able to bring before them such an exact reproduction of his excellent work. Dr. C. A. Page, of Oakville, presented a paper on "Persistent occipito-posterior positions in relation to the country practitioner." Owing to lack of time Dr. R. A. Arthur, of Sudbury, and Dr. K. C. McIlwraith, of Toronto, did not read their papers on "The Walcher position in obstetrics" and "The use of pituitary extract in obstetrics."

On the afternoon of the third day the military session under the patronage of His Honour the Lieutenant-Governor of Ontario, was commenced. The first paper was by Dr. Goldwin Howland, of Toronto, on "Neuroses in returned soldiers." The paper was confined to a consideration of the various symptoms met with in the functional nervous cases which had attended the Central Military Convalescent Hospital in Toronto. The occurrence of various symptoms not commonly met with in the hysterical and neurasthenic cases of ordinary civil practice was commented upon, and several case reports were read to elucidate the speaker's remarks. The paper was discussed by Dr. Loudon, who had been associated with Dr. Howland in his work upon these cases. "Cere-

bro-spinal meningitis among soldiers" was the subject of a paper by Captain Fitzgerald and Captain McClennahan, of Toronto. It was pointed out that some of the rather unsatisfactory results in the treatment of this disease when it first occurred were probably due to the inability to obtain proper anti-meningococcus serum. "Effects of poisonous gases as shown in returned soldiers" was given by Dr. J. H. Elliott and Dr. H. M. Tovell, of Toronto. Dr. Elliott stated that it was now proved that the Germans had been experimenting for years in their laboratories on the effects of poisonous gases upon animals with the idea of using the most harmful of them in warfare. The gases which had been used by them were for the most part chlorine and bromine. These gases produced all degrees of asphyxia, and the effects depended to a great extent upon the length of exposure and the concentration of the gases. Those who succumbed early died of acute pulmonary congestion and oedema of the lungs. In such cases the lungs were found to show congestion and oedema with large areas of acute emphysema, yellowish exudation and subpleural hæmorrhages. The symptoms were a sense of constriction about the throat, a feeling of oppression, dyspnoea, cyanosis, and expectoration of mucous and blood. X-ray plates from cases at the Central Military Convalescent Hospital of Toronto were exhibited. These showed large coarse strands of fibrous tissue running outwards from the hilus of the lung. Some cases had been followed by tuberculosis. Colonel Marlow, A.D.M.S., next spoke on "Medical problems involved in the classification, treatment, and final disposition of invalided soldiers."

The meeting then adjourned to attend a garden party which was held at "Ardwold", the beautiful home of Sir John and Lady Eaton. The guests were received by Sir John and Lady Eaton, Dr. and Mrs. H. B. Anderson, and Mrs. Timothy Eaton. Several bands were in attendance as well as many of the men of the 110th Irish Regiment of which Sir John is Honorary Colonel.

In the evening of the same day "The problem and plans of the Military Hospitals' Commission in dealing with invalided soldiers" were discussed by Senator J. S. McLennan, and Professor Stephen Leacock, of McGill University, spoke on the "Economic problem presented by the treatment and disposition of returned soldiers." Professor Leacock said that just as the gathering together of great armies was a task almost beyond belief, so would the strain upon our economic machinery to rehabilitate these armies at the declaration of peace be stupendous. The

government had, he thought, done marvelously well with the problems now before it. The statement and belief of many that war brought prosperity was absolutely fallacious, although the feeling that England would be faced with dire poverty shortly after the declaration of war had not been borne out in fact, as never was prosperity greater and employment more easily obtained. War would leave no added prosperity, and, just as the war was colossal, so too must be the poverty that would come after it. The future of Europe would be worse than that of Canada, as in Canada an influx of people would be followed by money from the States for the development of our vast and almost untouched natural resources. The problem of the partially disabled was one that would have to be fought and wrangled about. The most serious problem, however, was that of the men of the disbanded armies. Many of them would never be content to return to the dull narrow life of the lowly workman; but after the task of the open air and sunshine would demand outside work, their just heritage. In Canada, at least, the opportunity would be great, but it was not only the Canadian but other soldiers also that would have to be looked after, and this was a matter that would require the coördination of the whole Empire. War had suddenly awakened the world to the fact that everyone must look after everyone else. After saying that every man must fight it would be impossible to refuse them the chance to live. Either work or bread must be provided. The problem must be solved in Canada in conjunction with the other parts of the Empire.

The meeting closed by passing a vote of thanks to the retiring president, Dr. H. B. Anderson, for his efforts in bringing about the best attended, the most interesting, and instructive meeting in the history of the Association.

THE ONTARIO HEALTH OFFICERS ASSOCIATION

THE fifth annual conference of the Health Officers of Ontario was held at the University of Toronto, on the last two days of May. Dr. A. J. Macauley, medical officer of health, of Brockville, vice-president, presided in the absence of the president, Dr. Macpherson, of Peterborough, who is on active service.

The first forenoon of the meeting was taken up in a lengthy and animated discussion of measles following the reading of a paper by Dr. M. B. Whyte, superintendent of the Isolation Hospital,

Toronto, upon "The quarantine period for measles." Dr. A. Dalton Smith, medical officer of health, of Mitchell, and Dr. V. A. Hart, medical officer of health (Vespra), Barrie, also presented papers upon "Measles," and "Should the breadwinner be quarantined?" The concensus of opinion seemed to be that the present quarantine of three weeks with a sixteen day exclusion from school following exposure was of too great length. It is generally considered that measles is infective for from three to five days before the rash appears and for not longer than seven days following the rash, perhaps even shorter than seven days, and that the exfoliation, third persons and fomites do not carry the disease. Second attacks are quite rare, consequently persons who have had the disease need not be quarantined. Those who have not had the disease should be held under quarantine for two weeks after last exposure. Those who suffer from the disease should be quarantined for seven days after rash appears unless there are discharges or nose bleed.

The discussion of this subject will probably induce the Provincial Board of Health to make some relaxation in the present regulations.

Dr. Frederick Adams, epidemiologist of the Toronto Health Department, read a paper entitled, "Some observations on typhoid fever in Toronto," in which he outlined the means taken to produce the much lessened incidence as well as the death-rate from this disease in the last six years. In 1910 the death-rate from typhoid in Toronto was 40 per 100,000. In 1915 it had reached the phenomenally low rate of 1.9 per 100,000, the lowest rate for any of the large cities of America. The chief factors in this condition of affairs were announced to be—chlorination of the water supply, pasteurization of all milk except certified milk, and the campaign against flies and outdoor privies.

The Health Department of Toronto deserves the strongest commendation for its success in abating this preventable disease.

Dr. J. G. Fitzgerald read a short paper upon "Epidemic cerebro-spinal meningitis," giving the marked features of the disease and advising the necessity of its early recognition by means of spinal puncture. The treatment is by repeated puncture and injection of anti-meningitis serum with careful feeding, guarding against relapses and the use in persistent cases of autogenous vaccine.

The occurrence of this disease among the troops has given peculiar advantages to those studying the disease, for the reason

that it is diagnosed early and energetically treated. During the past season all the cases among troops in Military District No. 2 have recovered.

At the afternoon session the acting president, Dr. Macauley, gave an interesting address dealing with the value of the free distribution of antitoxin, and other biological products by the Provincial Board of Health. He also referred to the necessity of the prevention of pollution of public water supplies, and described how his own town of Brockville was proceeding in the direction of a safe water supply.

The feature of the session was a paper by Dr. W. H. Park, director of the Public Health Laboratories of New York City. Dr. Park has a charming personality and is well known to public health and medical men as an advanced authority on diphtheria, upon the diagnosis and treatment of which his paper treated. He advised the use of diphtheria antitoxin in large doses, and showed by comparison of results that the intravenous use of antitoxin was much more effective than either the intramuscular or the subcutaneous. In ordinary cases in the child, he gives three to five thousand units intravenously. In severe cases five to fifteen thousand units with correspondingly large doses in the adult. Laryngeal cases require early and large dosage.

Dr. G. R. Cruickshank, medical officer of health of Windsor, read an original and interesting paper upon the subject of "Adenoids and tonsils," advancing reasons for the belief that these organs are responsible for a great deal of infection in early life.

Following a free discussion of this subject by Doctors Hill, Varden and Dewar, Dr. F. A. Dales, medical officer of health, read a paper entitled, "Suggestions for improvement of association meetings," citing the following problems for discussion, viz.:

1. Are our quarantine methods satisfactory?
2. What changes, if any, are necessary?
3. What are the reasons for such changes?
4. Should there be separate sections to discuss health matters affecting cities and towns and for rural communities?
5. Salary of health officers.
6. Payment for reports of births and deaths.

In regard to the latter it came out in discussion that the reporting of births and deaths was a duty the physician owed to the State, and that while there seemed to be some ground for the question of payment for reports of notifiable diseases the physician should have sufficient interest in his patient's baby to notify its birth.

A paper on "Deductions of a New Ontario medical officer of health," by Dr. Edgar Brandon, medical officer of health, North Bay, gave an insight into the necessities and difficulties of health officers in the newer and rapidly growing towns of the province where the influx of foreigners and varied elements make that officer's task no sinecure.

The public meeting held in Convocation Hall in the evening was largely attended. A most interesting and instructive lecture upon sanitation in Serbia was given by Major W. D. Sharpe, who served as surgeon with the British Naval Hospital in Belgrade, in the first year of the great war. The lecture was illustrated by a large number of slides. He was followed by Captain Ruggles George, A.M.C., who gave a most interesting story of the first contingent illustrated by slides which carried the troops through Valcartier Camp, Salisbury, and for some months in Flanders. Captain George certainly made good use of his spare time and powers of observation while on active service.

The second day's proceedings were begun by an excellent paper upon "Auxiliary aids in public health work," by Dr. H. W. Hill, medical officer of health, London. In this paper Dr. Hill discussed the various means whereby public health measures may be advanced, laying particular stress upon publicity of public health education by means of lectures, leaflets, moving pictures, health exhibits, newspaper propaganda, etc., etc. The matter received a thorough discussion, among those contributing being Dr. Murphy, of Minnesota, Dr. Hastings, Dr. Cruickshank, and many others.

Dr. P. J. Moloney, district officer of health, read a splendid paper upon "Rural sanitation," and F. A. Dallyn, Esq., the provincial sanitary engineer, read a portion of an exhaustive paper upon "Methods of collection and disposal of domestic wastes in small municipalities." These papers have great value and when they appear in the journals will be read with much interest.

The morning session was concluded by a paper upon "The treatment of sewage by activated sludge," read by T. Chalkley Hatton, chief engineer of the Milwaukee Sewerage Commission. This paper which will appear in the *Public Health* and other journals should be carefully studied by medical and other municipal officers, as it seems to indicate a comparatively cheap and most effective treatment of one of the greatest problems, viz.: sludge treatment in the disposal of sewage. Mr. Hatton has carried out extensive experiments in sewage treatment, and is an engineer of repute in

the United States. His remarks were listened to with more than ordinary interest.

Dr. H. Logan, medical officer of health of Niagara Falls, gave a paper on the "Prevention of tuberculosis in children." This was discussed by Doctors Alan Brown, Kidd, and Hastings.

Dr. J. S. Nelson, of Westboro, read a paper on "Water supply and sewage disposal for suburban residences," and E. C. Henderson, Esq., of London, described the forms used by him in keeping records of communicable diseases.

This meeting was perhaps the best in point of papers and discussions yet held by the Association. It is intended to hold the next meeting in Toronto on the last Tuesday and Wednesday of May, 1917.

The officers elected were: Dr. A. J. Macauley, president; Dr. T. W. Vardon, vice-president; Dr. J. W. S. McCullough, secretary.

Committee on Papers and Arrangements: the officers-elect and, Dr. W. A. Crain, Crysler; Dr. W. McBain, Rainy River and Dr. J. A. Roberts, Hamilton.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE eleventh regular meeting of the society was held Friday evening March 3rd, 1916, Dr. F. A. L. Lockhart, president, in the chair.

CASE REPORTS: (1) Penetrating gastric ulcer, with specimen. (2) Congenital pyloric stenosis, living case, by Dr. E. M. von Eberts. The report of these cases appears on pages 604-606 of this number of the JOURNAL.

DISCUSSION: Dr. G. G. Campbell: The child came to my out-patient clinic with the history which Dr. von Eberts has given. The child was stripped and put on its back on a table and as soon as I looked at it I could see peristaltic waves passing over a prominence in the abdomen to the left of the centre line just below the costal margin. On palpating, I could distinctly feel just in the centre line a mass which appeared about as big as the end of my index finger. The situation of the mass led me astray and I could not make up my mind what it was. We tried the effect of a large enema, which as you have heard was quite successful and the symptoms entirely disappeared for two or three days and the question then was just what we had to deal with. The symptoms came on again in an aggravated form and the same conditions

were noted except that one could not feel any mass in the abdomen where it had been originally felt. The fact that the bowels moved with the enema, and the absence of blood or mucous in the stools, showed conclusively that it was not an intussusception and we considered the possibility of it being a pyloric stenosis.

These cases are more common than one would expect and now they are being more generally recognized. They are generally first recognized about the third week of the child's life, for during the first two or three weeks the stomach either enlarges rapidly or the amount of food taken is small, and the vomiting, if any, is not paid much attention to. About the third week it becomes worse and, on palpating, the peristalsis and the mass is recognized. The diagnosis cannot be definitely made unless one can palpate the hypertrophied ring at the pylorus and it is easier to make it out when the child has lost some of the plumpness which it had at birth. So far as the treatment is concerned we can divide these cases into two classes. The obstruction is a mechanical one. In the first class the orifice is so small that it is impossible for food to pass through and nourish the child, in the other there is a narrowing of the pylorus which may become almost closed with spasm. The pyloric irritability may pass off at times and things go smoothly for a while and then another spasm with vomiting may occur. We had a case of this type some time ago which did all right until it was put on artificial food, then vomiting persisted and the child lost weight. Dr. von Eberts did a gastroenterostomy which was successful, but unfortunately the child had had pneumonia before coming into the hospital and developed from this an otitis media which spread to the meninges and it died from brain symptoms. At autopsy it was shown that the operation was successful. The treatment suggested in the textbooks of washing out the stomach before attempting operation seems to me to be a great mistake. Give it the blandest possible sort of food; allow the child to nurse for shorter intervals than would normally be the case; and endeavour to prevent dilatation of the stomach by not overfilling it. If the condition can be prevented from becoming worse, in a good many of them the spasm seems to relax, or the pylorus increases in size, and sufficient food gets through to nourish the child. Once, however, these bad cases begin to go downhill rapidly and vomiting becomes persistent, it does not do to leave them too long.

Dr. E. M. von Eberts: What Dr. Campbell says about adhering to breast feeding and avoiding washings is very important. In one case which I saw the washings seemed to aggravate the

vomiting very much. If a wet-nurse cannot be obtained, or if the milk does not agree with the child, one has to resort to artificial feeding. Breast fed children certainly do better. In the present case the child has had practically no symptoms since operation.

PATHOLOGICAL SPECIMENS: Series by Dr. J. W. Scott.

1. Dissecting aneurysm of the aorta, showing healing after a previous rupture in the first portion of the arch.
2. Tuberculous meningitis.
3. Tuberculous peritonitis.

PAPER: The paper of the evening was read by Dr. A. E. Garrow who took as his subject, the treatment of gastric and duodenal ulcer. This paper appears in the current number of this JOURNAL.

DISCUSSION: Dr. C. K. P. Henry: There are several points in this paper on which I would like to speak. I have had an opportunity of operating on five cases of gastric or duodenal ulcer, three acute perforations and two for excessive hæmorrhage. In most of Dr. Garrow's perforation cases he has been in the habit of draining. Of my three cases one was secured within fourteen hours after perforation, one within four hours and the other ten hours. In these the suction apparatus was used for cleansing the peritoneal cavity, no gauze was used to swab and the abdomen was closed without drainage. The recovery from the operation was satisfactory and I felt that the removal of the septic material was exceedingly well carried out with this suction apparatus. I understood Dr. Garrow to say that he did not favour operating on cases of severe hæmorrhage. I have had two cases in which both had lost one to one and a half pints of blood, several hæmorrhages coming on without warning. One case had only four days' history of indigestion but had an ulcer ten or fifteen years before. The second case was that of a man who had a slight dizzy attack at his office, and the following day a most extreme degree of hæmorrhage. Dr. Malcolm saw him and sent him to hospital and his condition was despaired of for the first twenty-four hours. However, later I did a posterior gastro-enterostomy and he gained forty pounds in three months. As to operation in cases of extreme hæmorrhage the general feeling is that operation should be deferred. In my second case, a woman with a very large hæmorrhage, I did a gastro-enterostomy ten days after. She vomited once about two ounces of blood, otherwise she did well and gained fourteen pounds in weight inside of the first six months. As to the catheter feeding, to me

that is a new method and I think would have saved one of my cases. The perforation had been recovered from but it was felt that owing to the history he gave it was advisable to do a gastro-enterostomy, following which he had vomiting and lavage gave only temporary relief. A second operation was done eight days after and there was found to be a high up obstruction, a large amount of small bowel being greatly dilated. This case lived four days following entero-enterostomy which was done under local anæsthesia and I think if he had been fed by catheter he would have been tided over his extreme condition and a more satisfactory operation performed later on. In the appendix cases in the last year I have not drained any, even with general peritonitis; the suction apparatus seems to clean up the abdomen so efficiently that it seems folly to try to drain with tubes. I thank Dr. Garrow for his paper to-night and for the very interesting points which are so hard to find even in the literature. The cases which we get at first hand teach more than can be got from any text-book or any amount of literature.

Dr. W. F. Hamilton: One of the difficulties in which many of us are placed in regard to treatment of these very large hæmorrhages is that gastric ulcers are very often latent and the previous history of a serious ulcer and of erosion are alike. One of Dr. Garrow's worst ulcers was found in a man who had never given any sign of ulcer previous to two weeks before his operation. I have seen more than once alarming hæmorrhages from the stomach in those who have given no previous history whatever of gastric ulcer and I distinctly recall two patients who have had hæmorrhages so severe that it would be impossible for any of us who have not had experience to believe that such an amount of blood could have come from small, practically invisible, areas in the stomach. In these two cases the blood came both by the bowel and the stomach and produced in a very short time such a degree of pallor and change in the appearance of the patient that it gave extreme anxiety. When one admits that hæmorrhage may be very copious from even the latent ulcers, one must admit that the absence of previous history is not the best evidence to go by. Dr. Garrow has spoken with firmness concerning the time to interfere or not to interfere in these cases; "if they cannot be cured medically they cannot be cured surgically." The difficulty is to stand by and see a patient bleed to death, for I have not yet discovered any means of knowing when we have the small erosion to deal with. I admit that my case with Dr. Garrow and that with Dr. Armstrong went badly, this for the time being supporting Dr. Garrow's view.

Dr. E. M. von Eberts: I would like to lay emphasis upon what Dr. Garrow says with regard to medical treatment. A great many cases come to the surgeon because the primary medical treatment is inadequate. The histories frequently show that an individual after a first attack, or during the first attack, receives a short course of medical treatment which relieves the symptoms, but does not cure. A great many cases could be cured at the time of the first attack if the medical treatment were continued longer, and if it were possible to induce patients who felt well to continue their treatment for a longer period. A number of the chronic cases which come to the surgeon could have been cured in the initial stages. When once a pre-pyloric and duodenal ulcer becomes chronic, there is not very much hope from medical treatment, for the simple reason that, though it may heal, healing almost invariably leads to obstruction. I have seen several of these chronic cases which improved greatly under medical treatment, but eventuated in serious pyloric obstruction, and a gastro-enterostomy had to be performed to relieve the obstruction. I am also interested to hear Dr. Garrow say that he has abandoned the use of occlusion. Personally I have never employed it except for two definite indications. I think that in duodenal ulcer, where hæmorrhage has been recent, occlusion by plication is possibly justifiable. The other indication is, I should say, in those cases where, owing to the existence of perigastric adhesions involving the lesser sac behind the pyloric portion of the stomach, it is not possible to place the opening to the right of the line of the cervical portion of the lesser curvature. In other words, if the anastomosis can not be placed well within the pyloric portion of the stomach, occlusion by plication may be justifiable. We know from x-ray experiments that gastro-enterostomy is not a measure which results in drainage of the stomach, and, if the opening is placed in the fundal portion, the bismuth meal may be seen to pass for the first two hours continuously by the normal route.

As to the use of the fascial band, it has been shown that it increases the vomiting after operation and certainly adds to the hazards of the undertaking.

I should like to ask Dr. Garrow what he thinks is the physiological *raison d'être* of gastro-enterostomy. Many surgeons agree that the favourable results and healing following gastro-enterostomy are due, not to the diversion of the food stream, but to the fact that the hyperacidity is overcome, either by neutralization, reflex action, or the action of hormones.

An interesting point is that chronic indurated ulcers, treated successfully by gastro-enterostomy, very rarely return with carcinoma. Whether the admission into the stomach of the alkaline juices gives the protection which the small bowel enjoys normally, is also a moot question.

Dr. G. E. Armstrong: In the whole subject of the treatment of gastric and duodenal ulcers and their complications, the questions arising are so numerous that one can only touch upon two or three. The first one which has excited a great deal of interest, is the question of occlusion; that question has been before the profession for just thirty years. The first time I visited Vienna, von Hacher was actively engaged on this subject and he did it by plication. It was practised by all of us doing gastric surgery for many years and some of us thought it did good. I think the present view, with which I am thoroughly in accord, is that the subject has been worked out to a finish and the only thing new I have seen is practised by a young man working in the laboratory of the Michael Reis Hospital, Chicago. He places a fascial band between the muscularis and the submucosa of the duodenum, a broad one, brings it round and sews it. In dogs, up to nine months and afterwards the occlusion has been absolutely perfect. Our smoothest recoveries occur in those cases with pyloric stenosis. If the gastro-enterostomy opening is put up in the antrum near the canal of Jenesco, the food will go through the new opening; if the pylorus is patent some may go through the pylorus but the chief bulk will go through the gastro-enterostomy opening. If you go to the other extreme and put the opening at the fundus, vomiting will occur even if there is pyloric occlusion, and a good many of them vomit until they die.

The question of hæmorrhage is also most interesting and I want to speak on two points in this connexion. We have three kinds of hæmorrhage at least before us; the small leaky hæmorrhages coming gradually, month by month and year by year, producing a definite anæmia which does not yield to treatment and should be subjected to surgical interference. We have large hæmorrhages in patients with a history of gastric ulcer. We put those patients to bed, no food, give them medical treatment, morphia, ice bags, and if after that they continue to have another large hæmorrhage, the wise way is to interfere and interfere promptly. We have it stated by a man with the authority of Moynihan that a gastro-enterostomy is all that is required and it is all that he ever does, and he has never lost a case when he has done that.

Other men have, however, and probably the true explanation is if your bleeding ulcer is in the pylorus the contractile part of the antrum, your gastro-anastomosis, by preventing dilatation arrests the hæmorrhage; if in the fundus they will go on bleeding as much as before unless you control the hæmorrhage from that ulcer by local treatment. The third class is a different proposition. These cases come before us with tremendous hæmorrhage and without any previous history at all. They occur sometimes in young men without any history. In those cases we do not save very many if we do not find where the hæmorrhage comes from. They are a class where we cannot find anything—the point from which the blood escapes—there is an ooze all over that stomach wall and they die, and the pathologists cannot find any one point from which the hæmorrhage came. Now in those cases, whether due to infection or not, in some of them with a similar history we find an ulcer and it is just that point that I want to make, and I make it especially because this point has been before the surgical societies for discussion and they have taken two sides in the matter. I would not like to stand by without making an effort to save these people. In the first place we may have a gastric or duodenal ulcer without previous history, the hæmorrhage may be coming from one of these ulcers and we may be able to deal with it. I have found erosions, fissures, which thoroughly treated by cautery have not bled any more, and these patients simply by a gastrotomy and opening the stomach, and closing again, have gone on well and recovered. Until we positively are able to exclude cases of ulcer of different varieties it is not quite the thing to stand by and not try to save these people, although in some of them we may fail. I was rather hoping that Dr. Hamilton and other physicians would take up the question of the excision of gastric ulcers in reference to their etiological relationship to the development of malignant disease. That is a matter of much interest. Very often I think these ulcers heal and very seldom give rise to anything else. I think it is a pretty safe proposition to make that where gastric cancer develops for the most part there is a previous lesion, but that is different from saying what proportion of gastric ulcers become malignant. I would say that if a gastric ulcer is accessible and can be removed without increasing the hazard to the patient it is a good practice to excise it, but if it cannot be excised without increasing the hazard it is better not to do it. Another point is to funnel the stomach. Those who are familiar with the gastro-enterostomies know that we bring the stomach down through the slit in the transverse

meso-colon. Sew that away up on the stomach wall so that you make a funnel and if you want to do it well and nicely do the posterior part of the sewing before you have done your gastro-enterostomy. There are many other points which one could take up on this interesting subject but that is all I will mention to-night.

Dr. F. R. England: I wish to express my appreciation of Dr. Garrow's paper. I share his opinion, namely, that given a definite case of gastric or duodenal ulcer, operative treatment is the proper, if not the only treatment. In the case of a gastric ulcer excision of the ulcer is to my mind the most rational practice. In duodenal ulcer it is a different matter and experience has taught that good and satisfactory results may be obtained by performing a gastro-jejunostomy and nothing more. I recall a case which I operated on several years ago for severe hæmatemesis and malæna. The patient was a man fifty-eight years old who gave a history of dyspepsia for over twenty years. A tumour was palpable in the epigastrium and his general condition was very poor. It was feared that if another hæmorrhage occurred he would die. Gastro-jejunostomy was performed and recovery was prompt and uneventful, no further bleeding occurred and he left the hospital in less than three weeks. The tumour promptly disappeared and the patient still continues well and is enjoying much better health than he did for years prior to the operation.

If dealing with a gastric ulcer, where from its situation it cannot be readily excised, then possibly one had best be satisfied to leave the ulcer and simply do a gastro-jejunostomy; one's own experience must guide him in these cases. About three years ago I excised a saddle ulcer. The patient was a man forty-one years of age. All was well for six months when symptoms of pyloric stenosis appeared. A gastro-enterostomy was done, giving complete relief and the patient has since joined one of the regiments and gone overseas. I have never practised occlusion in any of my cases. Dr. Garrow's employment of jejunostomy for the relief of symptoms of obstruction is a good idea and something to be remembered and practised in such desperate cases.

Dr. Garrow: I quite agree with Dr. Henry on the question of drainage. Early operation and thorough cleansing by suction obviate drainage. Late operations with much soiling and considerable peritoneal reaction should be drained by a suprapubic incision for from twenty-four or forty-eight hours.

While I agree in the main with Dr. Hamilton's remarks, I am still convinced that acute fulminating hæmorrhages, occurring

without any previous history of chronic ulceration, are not suitable for surgical interference. Repeated hæmorrhages with a history of ulceration demand surgical intervention.

The application of the facial bond to the submucosa and covering it over by suturing the peritoneal and muscular coats, as described by Dr. Armstrong, is time consuming and difficult to perform. Moreover, experimentation shows that it, like other methods, may fail to ensure permanent occlusion.

In answer to Dr. England's question I would say, if excision of an ulcer is feasible and does not add materially to the risk, then do it. In many cases, however, it is impossible, too hazardous, and not to be considered.

MEDICAL LIBRARY ASSOCIATION

THE nineteenth annual meeting of the Medical Library Association was held in Detroit on June 12th and in Ann Arbor on June 13th. Nearly all the most important American medical libraries were represented and two Canadian ones—the Toronto Academy of Medicine and the Library of the Faculty of Medicine of McGill University. In addition to the discussion of questions of great library interest, several points of particular interest to the medical profession were considered. Of these perhaps the most important was the question of arranging bibliographical material; it was suggested that all references be arranged uniformly, according to the year, volume, and page. Instruction in the use of the various indices and bibliographies was recommended as being of practical value to the medical worker. It was also thought that by presenting to the profession the difficulties experienced by libraries in obtaining reprints, the authors might be induced to supply these more liberally to the various libraries of the Association. The question of not printing the third series of the Index Catalogue of the United States Surgeon-General's library was another point brought up before the association: a resolution was passed that the Medical Library Association send a preamble to the Surgeon-General's Library that this series be continued, as it was felt that a great loss would be sustained by the libraries and medical profession if they were dependent solely upon the Index Medicus and the special bibliographies.

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